Medical
Library
Copy 2

THE JOURNAL

of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 146, NO. 1 CHICAGO, ILLINOIS MAY 5, 1951
COPYRIGHT, 1951, BY AMERICAN MEDICAL ASSOCIATION

TREATMENT OF ACTIVE TUBERCULOUS PERICARDITIS BY PERICARDIECTOMY

Emile Holman, M.D.
and
Forrest Willett, M.D., San Francisco

Tuberculous pericarditis, chronic and insidiously progressive, frequently characterized in its early stages by an inflammatory effusion and culminating almost inevitably in great thickening and fibrous contraction of the diseased pericardium, presents real difficulties in its management.[1] From very inception, it poses the twofold problem of controlling infection and correcting the mechanical interference with the flow of blood imposed by constriction of the heart or of its great vessels, most particularly the vena cava, the compression of which is believed to be the primary reason for the persistent and recurring pleural and peritoneal effusion.

The gravity of the disease is illustrated by the study of Harvey and Whitehill[2] "Of 20 proven cases with effusion 16 died and of 17 proven cases without an effusion 15 died, a mortality of 83 per cent." Blalock and Levy,[3] in a study of 22 proved cases in 1937, reported that

> Every patient, with one exception, with a proved diagnosis of tuberculous pericarditis who has not had a pericardiectomy, is dead. . . . Of the six patients operated upon for removal of constricting pericardium, three were cured or markedly improved, and three are dead. Of the latter, one died 6 months after operation of miliary tuberculosis, the second died 2 months following operation, also of miliary tuberculosis, and the third died a few minutes after completion of the operation.

In Churchill's experience,

> active tuberculosis of the pericardium may produce the entire syndrome of chronic constrictive pericarditis. The point at issue is whether operation can be effective if performed during the active stage of the infection. The reports in the literature of operations during this period are uniformly discouraging and confirm our personal experience.

Beck states that "as long as the tuberculosis shows activity, one cannot expect to relieve the cardiac compression."

Four proved cases of active tuberculous pericarditis in which patients were either cured or markedly improved by pericardiectomy form the basis of this report. Our experiences have led to certain conclusions quite at variance with those expressed by Blalock, Beck and Churchill. However, in suggesting a new approach to the problem, we freely concede that streptomycin and other antibiotics are of primary importance in modifying previous conceptions as to treatment. In two cases the unique opportunity was presented in a government hospital to observe the illnesses uninterruptedly for a number of months from the period of effusion to the development of disabling compression by the contracting pericardium.

REPORT OF CASES

CASE 1.—L. M., aged 27, a Negro man, entered Fort Miley Hospital on Oct. 18, 1947 with shortness of breath of three weeks' duration and fever and sweats of two weeks' duration.

Physical examination revealed a blood pressure of 118/70, a temperature of 100.8 F., a respiratory rate of 20 and a pulse rate of 80. The heart was enlarged to percussion, and there was a loud pericardial friction rub over the precordium, maximal at the apex. The red blood cells numbered 3,700,000; the white blood cells, 6,700, with a normal differential distribution, and the hemoglobin level was 11.5 Gm. per 100 cc. The sedimentation rate was 63 mm. per hour (Westergren), and results of urinalysis were normal. Wassermann and Kahn reactions were negative. Agglutination tests for Brucella, tests for sicklemia and blood cultures were all negative. The tuberculin skin reaction (1: 10,000) was markedly positive. Gastric washings were negative for pathogens on culture and guinea pig inoculation. A roentgenogram of the chest and fluoroscopy on entry showed cardiac enlargement to the right and left, with feeble cardiac pulsations (fig. 1). The venous pressure in the arm was 15.8 cm. of water. Circulation (arm to tongue) time was 23 seconds (decholin® [dehydrocholic acid]).

A diagnosis of pericarditis with effusion was made, but an attempt at pericardial paracentesis two days following the entry yielded no fluid.

From the Stanford University School of Medicine and the San Francisco (Fort Miley) Veterans Administration Hospital.

1. Riesman, D.: Primary Tuberculosis of the Pericardium, Am. J. M. Sc. **122**: 6-20 (July) 1901. Beliet, S.; McMillan, T. M., and Gouley, B. A.: Tuberculous Pericarditis: A Clinical and Pathologic Study Bsed upon a Series of Seventeen Cases, M. Clin. North America **18**: 201-218 (July) 1934. Clarke, J. A., Jr.: Clinically Primary Tuberculous Pericarditis, Am. J. M. Sc. **177**: 115-121 (Jan.) 1929. Thompson, W. P.: Primary Tuberculosis of the Pericardium, J. A. M. A. **100**: 642-645 (March 4) 1933.
2. Harvey, A. M., and Whitehill, M. R.: Tuberculous Pericarditis, Medicine **16**: 45-94 (Feb.) 1937.
3. Blalock, A., and Levy, S. E.: Tuberculous Pericarditis, J. Thoracic Surg. **7**: 132-152 (Dec.) 1937.

The early temperature of 102 to 103 F. gradually declined over the first 30 days of hospitalization. The pericardial friction rub could no longer be heard after three weeks, although the paradoxical pulse remained. Roentgenograms of the chest showed a remarkable diminution in the cardiac silhouette from a diameter of 21 cm. on October 20 to 15 cm. on October 31 (fig. 1). During the next four months there developed a marked shortness of breath on effort, feeling of constriction in the lower part of the chest, swelling of the ankles, feeling of abdominal distention, epigastric discomfort and weakness.

Physical examination in April 1948 revealed a blood pressure of 100/80; a pulse rate of 100; somewhat muffled heart sounds; the pulmonic second sound louder than the aortic second sound; an enlarged and tender liver; mild ascites, and pitting peripheral edema.

On April 9 the vital capacity was 2,000 cc. On April 27 venous pressure in the arm was 35 cm. of water; in the leg, 40 cm., and circulation time, 35 seconds. A roentgenogram of the chest on April 13 showed a left pleural effusion (fig. 1). The cardiac outline was generally enlarged. Fluoroscopically there was no perceptible cardiac pulsation visible over any chamber. The electrocardiogram showed low voltage of the QRS complexes, and T waves inverted in all leads (fig. 2).

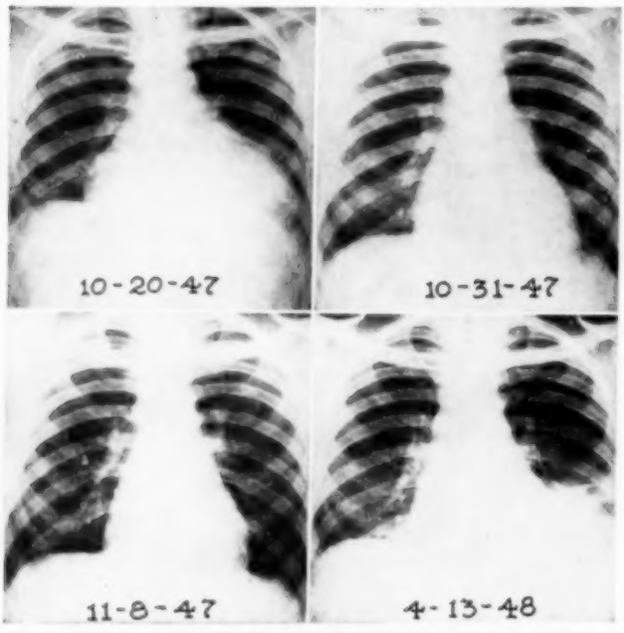


Fig. 1 (case 1).—Roentgenograms on admission (Oct. 20, 1947) revealed a pericardial effusion, which disappeared rapidly on bed rest, with prompt reduction in size of cardiac shadow (October 31) and practically normal cardiac shadow on November 8. Five months later (April 13, 1948) he presented all the features of cardiac compression, including a left pleural effusion.

Liver function tests showed a slight impairment of function; the sulfobromophthalein sodium excretion test showed 23 per cent retention; zinc turbidity reaction, 20 units; thymol turbidity reaction, 10 units (normal, 5 units), and the cephalin flocculation reaction, negative. The sedimentation rate had dropped after one month's hospitalization to 38 mm. per hour, after two months to 20 mm. and after four months to 13 mm. On May 4 the temperature was 98.6 F., pulse rate 80 and respiratory rate 20.

On May 5 pericardiectomy was performed with the patient under intratracheal cyclopropane anesthesia.[4] The thickness of the pericardium varied from 0.5 cm. to 1.5 cm. A small tubercle and considerable granulation tissue were present over the anterior surface of the heart. The pericardium was excised from beyond the left border to beyond the right border, from the inferior border of the heart and from around the inferior vena cava. The sternum was reapproximated with three steel wire sutures. Five hundred cubic centimeters of blood was administered during the operation.

Pathological study of the removed pericardium revealed chronic tuberculous pericarditis. Fluid obtained from the pericardium yielded tubercle bacilli both on culture and on guinea pig inoculation.

Oxygen, streptomycin and penicillin were administered after the operation. Administration of oxygen was discontinued on the third day and of penicillin on the seventh day, but the streptomycin was administered for three months, 2 Gm. daily for four days and 1 Gm. daily thereafter.

Roentgenograms of the chest after the operation (fig. 3) showed a right-sided hydrothorax, which steadily diminished in volume. A distinct shift of the mediastinum on change of position was also demonstrable by roentgenograms, the distance from the right border to the right thoracic wall being 10.4 cm. when the patient was lying in the left lateral decubitus position and 5.4 cm. when he was lying on the right side.

On July 28 circulation (arm to tongue) time was 14 seconds, and venous pressure in the arm was 11 cm. of water. On August 17 the electrocardiogram was practically normal (fig. 2). On December 21 the patient was apparently completely recovered. His vital capacity was 3,000 cc., and his blood pressure was 118/78.

On May 23, 1949 he was readmitted to Fort Miley Hospital because of a left-sided pleural friction rub, presumably tuberculous in origin, for which he was given a course of dihydrostreptomycin therapy. On November 5 he was apparently normal, with a blood pressure of 120/70 and normal heart sounds. A roentgenogram revealed slight residual evidence of the pleurisy at the base of the left lung (fig. 3).

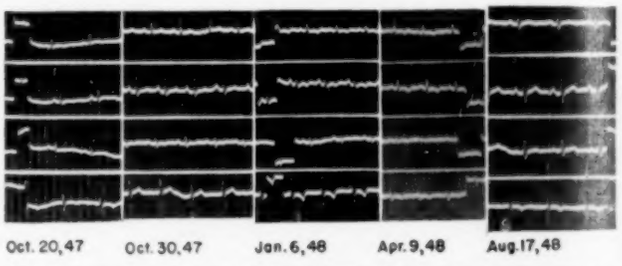


Fig. 2 (case 1).—Oct. 20, 1947: electrocardiogram in the presence of a pericardial effusion showed low voltage in the QRS complex, inverted T waves in leads 1 and 4 and flat T waves in leads 2 and 3. October 30: normal electrocardiogram with increased QRS voltage and upright T waves accompanied the subsidence of effusion and resulting reduction in cardiac compression. Jan. 6 and April 9, 1948: the reappearance of cardiac constriction was accompanied with decreased QRS voltage and inverted T waves. August 17: pericardiectomy on May 12 was followed by marked improvement in QRS voltage and by upright T waves in leads 1, 2 and 3.

CASE 2.—G. J., a Chinese youth aged 20, was admitted to Fort Miley Hospital on July 19, 1947 with fever, general weakness, cough and dyspnea that had confined him to bed for the previous 10 days. Physical examination revealed a temperature of 102 F.; a pulse rate of 104; a respiratory rate of 28, and a blood pressure of 100/60. The cardiac dullness was enlarged, and a pericardial friction rub was heard over the entire pericardium. A tentative diagnosis of tuberculous pericarditis was made.

Laboratory studies revealed a sedimentation rate of 97 mm. per hour, a vital capacity of 2,209 cc., a venous pressure of 14 cm. of water and a circulation time of 13 seconds. The tuberculin reaction was 3 + in 48 hours. Red blood cells numbered 3,500,000 and white blood cells 5,500. The hemoglobin level was 10.5 Gm. per 100 cc. At fluoroscopy on August 7 pulsations were absent, the cardiac shadow was enlarged, and a diagnosis of pericardial effusion was made. On bed rest the cardiac shadow regressed remarkably within three weeks' time (fig. 4).

On November 4 we aspirated 1,200 cc. of turbid fluid from the left chest. On November 24 and thereafter 0.5 Gm. streptomycin was administered intramuscularly twice daily. We removed 100 cc. of yellow fluid from the right chest on December 15. On December 29 venous pressure was 17.5 cm. of water, and circulation time was 34 seconds. Further studies

4. Holman, E., and Willett, F.: The Surgical Correction of Constrictive Pericarditis, Surg., Gynec. & Obst. **89**: 129-144 (Aug.) 1949. Holman, E.: The Recognition and Correction of Constrictive Pericarditis, J. Thoracic Surg. **18**: 643-651 (Oct.) 1949.

revealed a cephalin flocculation of 4 +, icteric index of 15.8 and thymol turbidity of 10 units. At this time, five months after admission, the pleural effusion, the increased venous pressure, the small heart with distant sounds, the full abdomen with the evidence of mild ascites, the electrocardiographic evidence of low voltage in the QRS complex and the inverted T waves all suggested the diagnosis of constrictive pericarditis.

We removed 750 cc. of amber fluid from the right chest on Jan. 21, 1948; 500 cc. on February 9; 800 cc. on February 26; 2,100 cc. on April 5, and 2,100 cc. on May 7.

On April 27 the vital capacity was 2,000 cc. On May 4 swelling of the lower extremities was observed. Venous pressure in the right arm was 30 cm. of water, and in the right leg, 34 cm. of water. White blood cells numbered 6,750; red blood cells, 5,490,000, and the hemoglobin level, 14 Gm. per 100 cc. On May 11 the patient's temperature was 98.4 F., pulse rate 110 and respiratory rate 20.

On May 24 a pericardiectomy through a median sternotomy was performed. When the pericardium was opened, about 300 cc. of turbid yellow fluid escaped under pressure; the heart itself was covered with yellowish granular material, and caseating tuberculous granulation tissue was encountered in

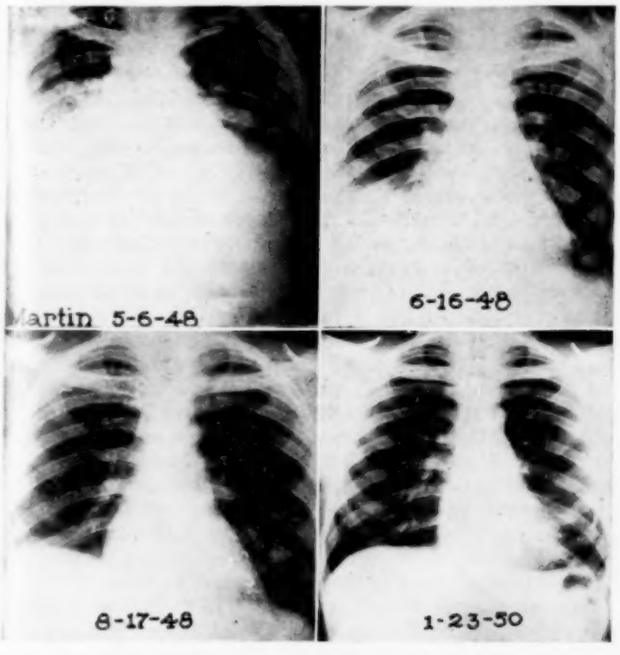


Fig. 3 (case 1).—Pericardiectomy performed on May 5, 1948. The right-sided hydrothorax slowly subsided following drainage of only 100 cc. reddish fluid through an intercostal catheter on the first day and aspiration of 280 cc. fluid on the second day. No further aspirations were necessary. Follow-up examination on Jan. 23, 1950 showed only mild pleural thickening on the left, incident to an attack of pleurisy in May 1949.

several areas. Calcified deposits were present in the epicardium of the right ventricle and right atrium, the attempted removal of which was promptly discontinued because of its hazard. Before closure the operative area was flooded with saline solution containing 2 Gm. of streptomycin and 2,000,000 units of penicillin.

To drain the operative area, the right pleural cavity, which had been entered in the exposure of the right cardiac border and the vena cava, was not closed but was drained to the outside by a large mushroom catheter placed in the sixth interspace in the anterior axillary line. The sternum was reapproximated with no. 20 stainless steel wire. The pulse rate at the end of the operation was 108, and the blood pressure was 100/70.

Microscopic studies of the excised pericardium revealed chronic granulomatous tissue consistent with tuberculosis. Cultures yielded tubercle bacilli.

In the first 24 hours 1,100 cc., and in the next 24 hours 400 cc., of serosanguineous fluid escaped through the catheter; none escaped thereafter.

On July 14 we aspirated 700 cc. of slightly turbid yellow fluid from the right chest; 1,150 cc. was removed on July 29, and on August 17 the last aspiration yielded 470 cc. (fig. 5).

On December 6 the venous pressure was 18 cm. of water (right arm) and 30 cm. of water (right leg). The circulation (arm to tongue) time was 28 seconds, and the blood pressure

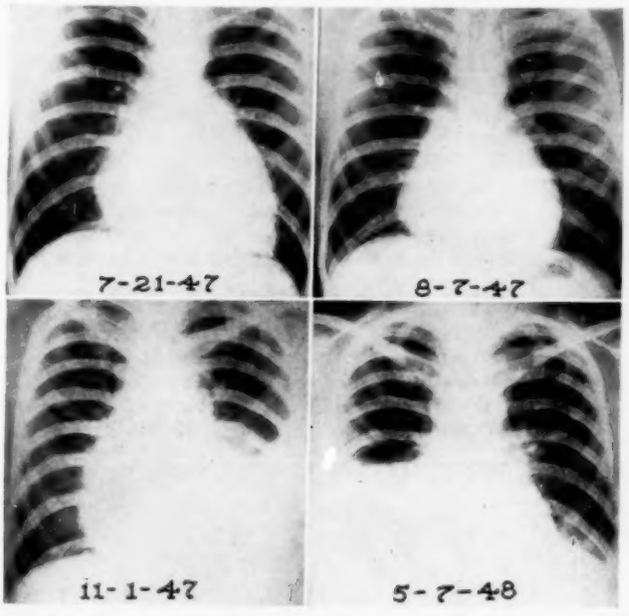


Fig. 4 (case 2).—Roentgenograms on July 21, 1947, two days after admission, showed an enlarged cardiac shadow that receded rapidly on bed rest (August 7). On November 1 the roentgenograms revealed a left pleural effusion followed by a persistent right pleural effusion requiring five aspirations before pericardiectomy on May 24, 1948.

was 120/80. The patient was discharged to his home on Jan. 20, 1949. On November 15 the blood pressure was 120/70; the pulse rate was 76; the venous pressure was 13 cm.

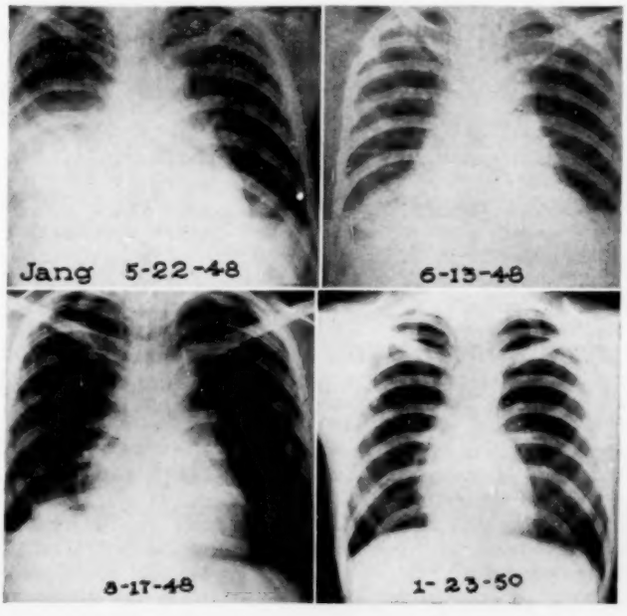


Fig. 5 (case 2).—After pericardiectomy on May 24, 1948, pleural effusion on the right necessitated repeated aspirations totaling 4,250 cc. of fluid, the last aspiration, on August 17, yielding 470 cc. No further accumulation of fluid occurred. A completely normal cardiac shadow was demonstrated on Jan. 23, 1950.

of water, and the circulation time was 18 seconds. The patient was attending college, carrying a half-time program without difficulty. A completely normal cardiac shadow was demonstrated by roentgenogram on Jan. 23, 1950 (fig. 5).

CASE 3.—A 20 year old Mexican was referred to Stanford University Hospital from the Monterey County Hospital on Nov. 27, 1948 with the diagnosis of constrictive pericarditis. The records of the latter hospital revealed an entry in January 1945 for cough and excessive sweating in school but with no significant physical findings. He appeared again at that hospital in May 1948, with the complaint of dizziness, fatigue, anorexia, persistent cough with occasional blood streaking, weight loss of about five months' duration and a swollen abdomen of about two months' duration. Significant findings at this time included a strongly positive tuberculin skin reaction (1: 1,000), sputum negative for tubercle bacilli and a sedimentation rate of 13 mm. (Cutler). He left the hospital against advice but returned in September 1948 in a state of great dyspnea; he was relieved by an emergency paracentesis of the abdomen. After this his liver was found to be large, his spleen palpable and the venous pressure in the arm 23 cm. of water. The sedimentation rate was 16 mm. (Cutler); serum proteins, 7.1 Gm. per 100 cc., and icterus index, 7. There was mild cardiac enlargement, and the blood pressure was 100/70. On fluoroscopy no cardiac pulsations were discernible because of presumed thickening of the pericardium. Since that observation, four tappings of the abdomen had been necessary.

On admission to Stanford University Hospital the patient gave an additional history of puffiness of the eyes, ankle

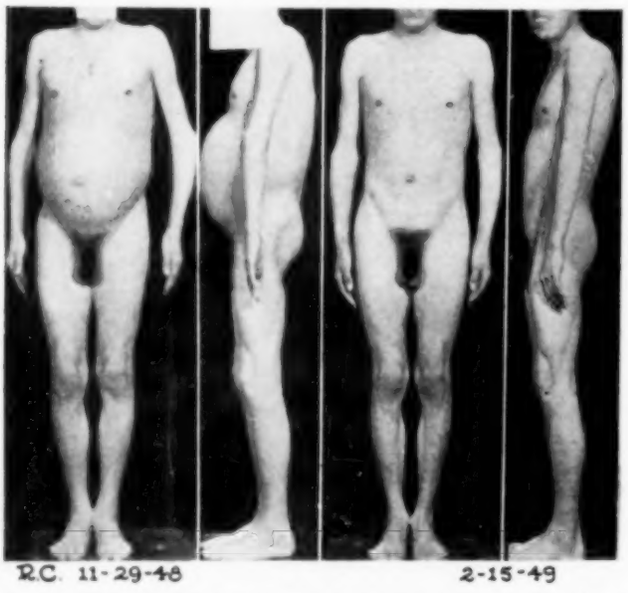


Fig. 6 (case 3).—Marked ascites in the presence of a constrictive tuberculous pericarditis (Nov. 29, 1948) was completely controlled (Feb. 15, 1949) by pericardicctomy on Dec. 9, 1948.

swelling, exertional dyspnea and fatigue for as much as 18 months previously.

Significant physical findings on admission were the following: no visible cardiac movements, a very slight apical beat palpable in the fifth interspace in the nipple line, a pulse rate of 80, a blood pressure of 110/80, clear heart sounds, no paradoxical pulse, a significantly distended and tense abdomen (fig. 6), slightly blue and cold hands and feet and pitting edema of both ankles.

Further studies revealed a vital capacity of 2.3 liters; a venous pressure in the right arm of 42 cm. of water and in the right leg of 46.5 cm. of water, which rose 17.0 cm. of water on compression of the abdomen; a circulation time of 23 seconds; a sedimentation rate of 3 mm. per hour; a prothrombin time 100 per cent normal, and a cephalin flocculation of 1 +. The serum protein level was 6.23 Gm. per 100 cc. (albumin 3.3 Gm., globulin 2.8 Gm.); blood urea, 25 mg. per 100 cc.; icterus index, 20; erythrocytes, 4,900,000; a hemoglobin level, 14.5 Gm. per 100 cc.; the hematocrit value, 41 per cent, and leukocytes, 7,300. The urine was normal. Roentgenograms revealed a moderate bilateral pleural effusion, more marked on the right, with a moderately enlarged cardiac silhouette (fig. 7). A kymogram showed no pulsation (fig. 8).

On December 4 paracentesis of the abdomen yielded 9,500 cc. of fluid.

The admission diagnosis having been confirmed, pericardiectomy was performed on December 9. On exposure the heart showed almost no pulsation, but after excision of the thickened pericardium there was vigorous pulsation of both ventricles, and the systolic pressure had risen 10 points at the completion of the operation.

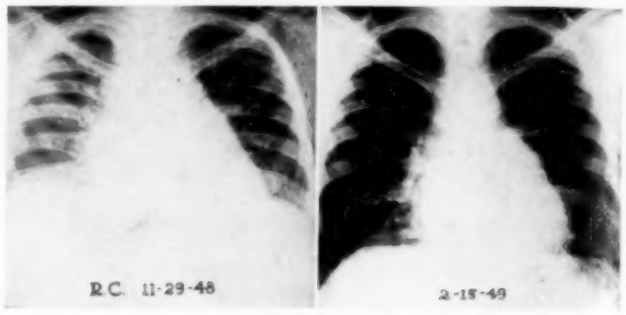


Fig. 7 (case 3).—Cardiac shadow in the presence of constrictive pericarditis was moderately enlarged, with a moderate bilateral pleural effusion, greater on the right, and elevated diaphragms due to ascites. The postoperative roentgenograms (Feb. 15, 1949) showed normal pulmonary fields and normally situated diaphragms.

Seven days after the operation the venous pressure in the right arm had dropped to 30 cm. of water, and when the patient was seen two months later, on Feb. 15, 1949, the venous pressure was 5 cm. of water in the arm and 15 cm. of water in the leg. On December 23 paracentesis of the abdomen again yielded fluid (7 liters), this being the last tapping necessary.

The pericardium examined microscopically showed an appearance suggestive of tuberculosis, and inoculation of a guinea pig yielded tubercle bacilli.

Follow-up studies on February 15 showed a blood pressure of 120/80, a pulse rate of 80 and a vital capacity of 4.3 liters. The patient had lost his dyspnea, and within a few months he returned to normal work and activity.

CASE 4.—M. C., a physician aged 30, was transferred from Permanente Hospital, Oakland, Calif., to Stanford University Hospital on Jan. 18, 1949 with a probable diagnosis of tuberculous pericarditis. His illness began about Oct. 28, 1948 with a presumed respiratory tract infection followed by fever, malaise, fatigue, chills, profuse sweating, mild headache and a cough productive of greenish sputum.

On November 3 he had been admitted to Permanente Hospital, where physical examination had revealed a moderately enlarged heart without murmurs or friction rub, a blood pressure of 110/64 and a normal liver. Two days later a

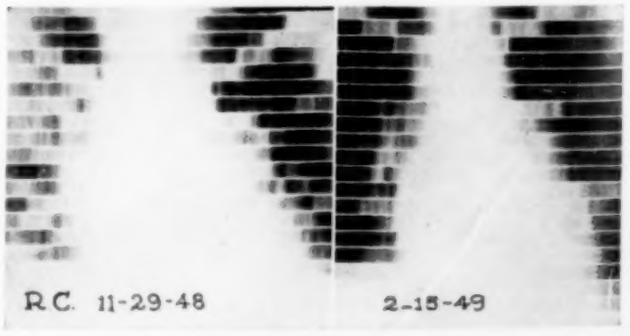


Fig. 8 (case 3).—Postoperative roentgenkymogram (Nov. 29, 1948) recorded almost no pulsation, in contrast with the postoperative study (Feb. 15, 1949) that showed good pulsation.

definite pericardial friction rub had become audible, and four days after admission there had been precordial pain, hepatic tenderness and a palpable liver. On November 10 circulation time (calcium gluconate) was 20 seconds.

Administration of penicillin was begun on November 18 in a dose of 600,000 units twice daily, with 4 to 6 Gm. of sodium salicylate daily. These had been discontinued on

December 9 and 14 respectively. By December 16 the to and fro friction rub had again become audible over the precordium, and the patient appeared acutely ill. The pulse rate was 100, and the liver became palpable to the umbilicus. On December 18 the circulation time was 28 seconds, and generalized edema of face and extremities and obvious ascites had appeared, followed by evidence of increasing pericardial and right pleural effusions. On Jan. 12, 1949 administration of 4 Gm. of aureomycin hydrochloride U.S.P. daily had been administered without improvement. Lanatoside C U.S.P. and mercurophylline had been administered with excellent diuresis. On admission, January 18, physical examination revealed a tired, weak, icteric, slightly cyanotic patient with puffiness of the eyes and obviously distended veins of the neck. His temperature was 101.1 F. (38.4 C.), pulse rate 124 and respiratory rate 26. Almost the entire right side of the chest was dull to percussion, with suppression of breath sounds and slight shift of the apex beat of the heart to the left. The left chest was clear. The heart was not large; the sounds were muffled, and there were no murmurs, but both pericardial and pleural friction rubs were present. His blood pressure was 96/70 and varied with respiration. The abdomen contained free fluid; the liver was hard and enlarged to the level of the umbilicus. There was some ankle edema. Venous pressure in the right arm was 32.5 cm. of water, which rose to 40.9 cm. of water on abdominal compression. Circulation (arm to tongue) time was 43 seconds. Blood urea was 31 mg. per 100 cc., bilirubin, direct 0.9 mg. per 100 cc., total 1.9 mg. per 100 cc. Roentgenograms of the chest showed a large right pleural effusion and a slightly enlarged heart, and on fluoroscopy and kymography the pulsations were definitely decreased in the lower half of the left cardiac border. The tuberculin skin reaction (1: 10,000) was strongly positive in 48 hours. Red blood cells numbered 5,130,000, white blood cells, 10,150; neutrophils 83 per cent, 15 per cent of which were banded; 9 per cent lymphocytes; 8 per cent monocytes, and a hemoglobin level of 15.3 Gm. per 100 cc.

The electrocardiogram on January 18 showed the QRS complex to have an abnormally low voltage, and the T waves were flat in lead 1 and inverted in leads 2 and 3.

On January 20 thoracentesis yielded 1,100 cc. of clear fluid; on March 18 the fluid was reported negative for tubercle bacilli on culture and guinea pig inoculation. On January 21 administration of dihydrostreptomycin U.S.P., 1 Gm. daily, was begun, but little improvement was noted in the next two weeks. Aspiration of the right chest yielded 1,100 cc. of clear fluid on February 4, an additional 1,000 cc. on February 8, a further 950 cc. on both February 10 and 12 and 250 cc. on February 19.

The sedimentation rate on February 15 was 27 mm. per hour. On February 18 venous pressure in the right arm was 24.6 cm. of water, and the circulation (arm to tongue) time was 48.8 seconds. Blood protein determination showed 5.25 Gm. per 100 cc., with an albumin-globulin ratio of 3.12:2.18. On March 3 the vital capacity was 2.1 liters, the venous pressure 27.4 cm. of water and the circulation time 35 seconds.

On March 5 subtotal pericardiectomy was performed through a midsternal incision. During the necessary manipulations the blood pressure on several occasions dropped to zero, but at the end of the decortication there was considerable improvement in the vigor of cardiac contraction. The myocardium itself showed significant fibrosis and granulation tissue over its surface. Five hundred cubic centimeters of blood and 500 cc. of salt solution were administered during the operation.

An interesting improvement noted by the patient on the first postoperative day was a feeling of warmth in his hands and feet, which formerly had always felt uncomfortably cold. The pulse was no longer paradoxical. There was a great deal of generalized sweating the first few days, and the urinary output was only 325 cc. in the first 48 postoperative hours despite an intake of 8,100 cc., including 5,000 cc. of fluids on the day of the operation (3,000 cc. by vein, 1,000 cc. by proctolysis and 1,000 cc. by mouth). On the third and fourth days the urinary output became adequate, and there was no further evidence of kidney impairment.

The postoperative course was one of exceedingly slow though steady improvement (fig. 9) under the administration of streptomycin, 2 Gm. daily, and digitoxin, 0.2 mg. daily. Four hundred cubic centimeters of amber fluid was removed from the right chest on August 1 and 200 cc. on December 1. The liver slowly receded in size, and by December it was no longer felt. Bilateral mastitis, which had appeared during the patient's illness probably as a result of impairment of liver function, disappeared about October 15.

The following observations were made on December 12: prothrombin activity, 55 per cent of normal; sedimentation rate, 17 mm. per hour; hemoglobin level, 75 per cent; red blood cells, 3,700,000; neutrophils, 4,600; temperature, 98.3 F.; pulse rate, 80; respiratory rate, 20, and venous pressure, right arm, 15 cm. of water.

The patient, though not at work, was active and considered himself well on the road to complete recovery.

COMMENT

The striking features common to all four cases at the time of operation were, first, the advanced state of cardiac impairment as evidenced by ascites and pleural

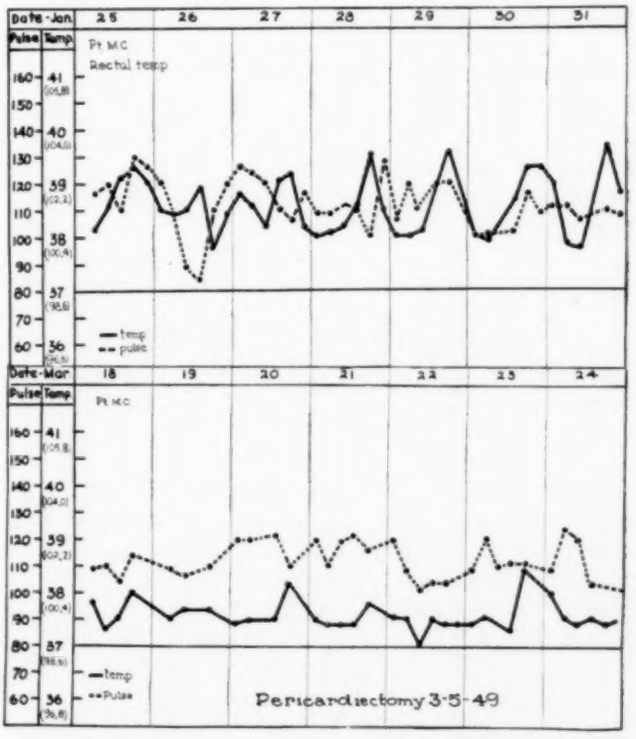


Fig. 9 (case 4).—Persistent fever and rapid pulse without abatement characterized the clinical course for three months preceding pericardiectomy on March 5, 1949, followed by prompt though slow reduction in both fever and pulse rate, which returned to normal only after months of confinement in the hospital.

effusion and, second, the relentless and progressive course of the disease from its inception, as exemplified by the slowly increasing disability imposed by cardiac compression. Clinical, roentgenographic and electrocardiographic evidence in the first two cases indicated that this compression was first produced by a pericardial effusion, which then subsided, only to be followed promptly by the development of compression due to gradual contraction of the fibrous pericardium.

The prolonged course of the disease before operation in the first two cases, nine months in case 1 and 11 months in case 2, at once raises the question whether the decompression pericardiectomy should have been performed at an earlier date. In retrospect, the answer is unequivocally affirmative. Reviewing our cases critically, we now believe that the operation in case 1 could

have been performed with profit and safety in November or December 1947 instead of May 1948.

Similarly, in case 2 the patient gave unequivocal evidence two months after admission of a pericardial effusion with signs of cardiac compression. In retrospect, this was the auspicious moment for operation, rather than eight months later after a prolonged period of increasing ascites and persistent right hydrothorax necessitating seven aspirations for a total of 7,550 cc. of fluid. During the operation a large intrapericardial pocket of tuberculous pus was found to be a factor in the cardiac compression from which a positive culture of tubercle bacilli was obtained. Primary healing and apparently complete cure followed a radical pericardiectomy.

In case 3 an opportunity for more radical treatment was presented in May 1948 at a time of only moderate abdominal effusion, but the patient's own intransigence precluded such a decision at that time, since he left the hospital against advice. He did not reappear until September, when he was completely incapacitated by the mechanical effects of the disease. An emergency abdominal paracentesis was required to relieve his symptoms. The operation, however, was not performed until December, and again valuable time was lost, with gradual progression of the disease.

In case 4 the period between the development of unequivocal symptoms of cardiac compression and the subsequent radical pericardiectomy for their relief was much shorter, but a month or two could have been saved, which undoubtedly would have been of great advantage in reducing the extent of myocardial damage and in shortening the length of a prolonged and troublesome convalescence.

Emboldened by these experiences, we wish to suggest the formulation of a rule that at the moment a diagnosis of cardiac compression can be made (in a case of presumed tuberculous pericarditis) an operation for cardiac decompression should be considered, regardless of whether this compression is noted in the stage of pericardial effusion or in the stage of pericardial constriction. This would provide early liberation of the heart from the adverse mechanical effects of the disease and would permit a more efficient combating of the inflammatory component. Technically, such excision of the pericardium can be performed in the presence of a pericardial effusion with considerably greater ease than is possible at a later stage, when the pericardium and the epicardium have become inextricably merged. At this earlier stage there also would undoubtedly be a greatly reduced involvement of the myocardium, which at the time of the operation was found far advanced in cases 2 and 4.

Heretofore patients with pericardial effusion ascribed to tuberculosis have been treated medically by prolonged bed rest, with expectation that the effusion would reabsorb, as indeed it did in cases 1 and 2, only to be followed in these two cases by compression due to contracture of an inflamed and thickened pericardium. Should circumstances indicate that such improvement is not taking place, that a pericardial effusion with high fever persists and that the patient remains in a precarious condition, largely the effect of compression due to the effusion, an operation should be considered at once. If the operation is decided on for a very ill patient, it might be undertaken in two stages, the first operation to consist of removal of the sixth left costal cartilage for evacuation of the pericardial fluid, followed 10 to 20 days later by the usual midsternal incision and radical pericardiectomy. The first operation might include the introduction of a drain into the pericardial space. The drain should escape from the chest through a separate laterally placed stab wound, thus permitting complete closure of the first incision and also permitting at the second operation the use of a centrally placed incision independent of both the first incision and the drainage tract. The usual adverse effects of a drain leading from the skin surface into the pericardium would be obviated during the brief period between operations by streptomycin and penicillin therapy. It would be expected that sufficient improvement would occur after the evacuation of the tuberculous effusion to make the more prolonged and more hazardous but imperative radical pericardiectomy a safer procedure within 10 days to two weeks.

At the present time it is axiomatic that for any patient suspected to have tuberculous pericarditis the administration of streptomycin would be part of the preoperative and postoperative treatment, as in cases 1 and 4. Optimum nutrition is also strongly stressed, with particular reference to supplementary vitamins and fresh citrus juices as a source of vitamin C.[5]

It is confidently predicted that in most cases of tuberculous pericarditis an operation can be performed earlier in the course of the disease than has heretofore been practiced, and that much valuable time, even life itself, will be saved by so doing.

SUMMARY

Tuberculous pericarditis is characterized by a prolonged course, exhibiting in the acute stage chills, sweats, fever, rapid pulse, dyspnea, increased sedimentation rate, leukocytosis, anemia, pericardial friction rub and pericardial effusion sufficient at times to produce cardiac and vena caval compression as shown by increased venous pressure, absence of ventricular pulsations on fluoroscopy and reduced voltage in the QRS complex and inverted T waves in the electrocardiogram. Such effusion may persist or may subside, as shown by reduction in the size of the cardiac shadow. Such subsidence of signs of effusion may be followed promptly by the signs and symptoms of cardiac compression due to contracture of the inflamed and thickened pericardium. The venous pressure may again become greatly elevated; persistent pleural effusion may necessitate repeated aspirations; ascites may develop, and complete and chronic invalidism may follow. It is suggested that the insidiously and relentlessly progressive character of tuberculous pericarditis demands consideration of operation at a much earlier stage than has heretofore been practiced, and that pericardiectomy should be performed at the time of pericardial effusion,

5. Holman, E.: Pre-operative and Postoperative Care, editorial, Surgery **1**: 637-639 (April) 1937. Holman, E.: Vitamin and Protein Factors in Pre-operative and Postoperative Care of the Surgical Patient, Surg., Gynec. & Obst. **70**: 261-269 (Feb. 15) 1940.

particularly if evidence of cardiac and vena caval compression is present. It is strongly urged that when the diagnosis of cardiac compression can be made clinically, either in the stage of pericardial effusion or in the stage of pericardial contracture, there is great need for prompt cardiac decompression. In a very ill patient with tuberculous pericardial effusion such decompression might best be effected by removal of the left sixth costal cartilage for evacuation and drainage of the pericardium, followed at a second stage 10 to 20 days later by median sternotomy and complete anterior pericardiectomy. Despite improvement after the first operation, the second operation must not be omitted.

Four patients with proved tuberculosis of the pericardium, in all of whom the disease was active at the time of operation as indicated by positive cultures of tubercle bacilli in three and by the demonstration of tubercle bacilli in the tissues of the fourth, were treated by radical pericardiectomy with resulting cure in three and marked and still progressive improvement in the fourth. All operative areas healed by first intention, despite the presence in the pericardium of active tubercle bacilli.

ADDENDUM

Since this article was written, a fifth case of tuberculous pericarditis, in a 20 year old man, has been reported. A radical pericardiectomy was performed in the stage of effusion, persistent high fever and an active tuberculous process as disclosed by positive culture. This was performed three months after the appearance of the first disabling symptoms of fever and effusion and has been followed by prompt and progressive improvement.

BILATERAL CARCINOMA OF MALE BREAST AFTER ESTROGEN THERAPY

James A. McClure, M.D.
and
Charles C. Higgins, M.D., Cleveland

Cancer of the male breast developing coincident with or after estrogen therapy is an unusual circumstance. Although the pathological changes taking place in the breasts of male experimental animals and also of women receiving estrogen therapy have been well described,[1] there are few cases in the literature concerning malignant changes in the male breast after estrogen administration.

In 1948 Abramson and Warshawsky [2] reported a patient with carcinoma of the prostate, who had received slightly over 1 Gm. of diethylstilbestrol and an uncalculated total amount of estradiol (ovocylin®) dipropionate. In their patient bilateral gynecomastia developed after 489 days of estrogen therapy. However, at autopsy only one breast was studied from a histopathological standpoint, and this was reported to show malignant changes. They further stated that no previous cases of cancer of the human male breast after the use of diethylstilbestrol had been reported.

In 1949 Howard and Grosjean [3] reported a case of microscopically proved bilateral scirrhous carcinoma of the male breast in a patient treated for carcinoma of the prostate with a total of 40,280 mg. of diethylstilbestrol. The patient received only 120 mg. of diethylstilbestrol over a 40 month period followed by a sharp increase in dosage to a total of 40,160 mg. in a 14 month period prior to his death. It was interesting to note in their case that the gynecomastia that developed on the small dosage of diethylstilbestrol changed on the large dosage as the breasts decreased in size and became tenderer but harder in character. In neither of the above cases was there noted a family history of breast cancer.

In 1948 Entz [4] and in 1950 Corbett and Abrams [5] reported a case of male breast malignancy after diethylstilbestrol therapy for carcinoma of the prostate. In each of their cases it was the opinion of the reviewing pathologists that these breast tumors were of metastatic origin rather than primary tumors.

Some time ago the Committee on Research of the Council on Pharmacy and Chemistry of the American Medical Association sent a questionnaire to 150 urologists asking whether or not they had observed breast cancer in any patient treated with estrogens for prostatic cancer.[6] The questionnaire showed that out of a total of approximately 17,000 patients there was only one additional possible case of cancer of the male breast.

REPORT OF CASE

A 56 year old white man entered the Cleveland Clinic on June 6, 1950, for investigation of a malignant lesion of the urinary bladder. The history revealed that two years previously this patient had consulted his family physician because of nocturia, dysuria and frequency. After a cystoscopic examination had revealed a malignant tumor of the bladder, a suprapubic transvesical resection with electrofulguration of the tumor base was performed and suprapubic catheter drainage employed.

During this convalescence he received four deep roentgen therapy treatments with a total of 870 r and, for financial reasons, was transferred to a Veterans' Administration Hospital. On admission, cystoscopic examination again revealed an extensive tumor of the bladder involving the entire base, and at this time a biopsy of the tumor was reported as a transitional cell

From the Cleveland Clinic and the Frank E. Bunts Educational Institute.

1. Haagensen, C. D., and Randall, H. T.: Production of Mammary Carcinoma in Mice by Estrogens, Arch. Path. **33**: 411 (April) 1942. Allaben, G. R., and Owen, S. E.: Adenocarcinoma of Breast Coincidental with Strenuous Endocrine Therapy, J. A. M. A. **112**: 1933 (May 13) 1939. Auchincloss, H., and Haagensen, C. D.: Cancer of Breast Possibly Induced by Estrogenic Substance, J. A. M. A. **114**: 1517 (April 20) 1940.

2. Abramson, W., and Warshawsky, H.: Cancer of Breast in Male Secondary to Estrogenic Administration: Report of Case, J. Urol. **59**: 76 (Jan.) 1948.

3. Howard, R. R., and Grosjean, W. A.: Bilateral Mammary Carcinoma in Male Coincident with Prolonged Stilbestrol Therapy, Surgery **25**: 300 (Feb.) 1949.

4. Entz, F. H.: Probable Metastatic Carcinoma of Male Breast Following Stilbestrol Therapy: Case Report, J. Urol. **59**: 1203 (June) 1948.

5. Corbett, D. G., and Abrams, E. W.: Bilateral Carcinoma of Male Breasts Associated with Prolonged Stilbestrol Therapy for Carcinoma of Prostate, J. Urol. **64**: 377 (Aug.) 1950.

6. Van Winkle, W., Jr.: Personal communication to the authors.

carcinoma grade 2 with squamous metaplasia (fig. 1). The patient then was given two courses of deep roentgen therapy over a five months' period during which time he received 4,400 r to the anterior bladder, 4,200 r to the left posterior oblique, 4,100 r to the right posterior oblique, 1,200 r to the right anterior oblique and 900 r to the left anterior oblique positions. For palliative treatment of the suprapubic pain he was then given the following estrogen therapy at the Veterans' Hospital. For 51 days the patient was given orally a daily dose of 15 mg. of diethylstilbestrol, receiving a total of 765 mg. He received orally 5 mg. of diethylstilbestrol daily for a total of 375 mg. A daily dose of 5 mg. of estradiol (ovocylin®) dipropionate was given intramuscularly for a period of 126 days, a total of 630 mg. being administered. For the total period of 126 days, the patient received 1,770 mg. of estrogens. Approximately six weeks prior to the cessation of estrogen therapy the patient noted swelling and tenderness of both breasts, and this progressively increased even after all estrogen therapy had been discontinued. The breasts became enlarged, hard and were moderately tender. There was some evidence of retraction of the nipples, more noticeable on the left side. This condition persisted until his admission to the Cleveland Clinic Hospital.

The past history was noncontributory except for the treatment of a duodenal ulcer since 1943. Family history disclosed that the patient's maternal grandmother had died of carcinoma of the liver; his mother, of carcinoma of the rectum at the age of 67; one sister, living, had breast carcinoma; one sister, living, had cystic disease of the breast; one sister, living, had an undiagnosed breast tumor.

Fig. 1.—Biopsy of bladder tumor. Section of transitional cell carcinoma grade 2 shows papillary structure of dark staining epithelium (× 70).

The physical examination on admission to the Clinic revealed a malnourished, ill appearing white man aged 56. The temperature, pulse and blood pressure were within normal limits, and the heart and lungs were essentially normal to auscultation. Examination of the breasts revealed both to be enlarged to about the size of a lemon and to be hard, tender and erythematous (fig. 2). Retraction of the nipples was noted, but no axillary lymphadenopathy was evident. The digital rectal examination was normal except for the prostatic examination, which revealed a hard, fixed prostatic bed with a broad base suggestive of a bladder neoplasm with extravesical extension. The testes were small. A 3 + pitting edema was noted in both ankles.

Laboratory studies were as follows: white blood count 9,000 per cubic millimeter; red blood count 2,450,000 per cubic millimeter; hemoglobin 6 Gm.; blood sugar 104 mg. per 100 cc.; blood urea 72 mg. per 100 cc.; carbon dioxide combining power

Fig. 2.—White man, aged 56. Both breasts are enlarged, hard, with retraction of the nipples.

53 volumes per cent; plasma chloride 511 mg. per 100 cc. (NaCl); serological examination was noncontributory; culture of the specimen of urine secured by catheterization revealed Bacillus proteus and Streptococcus fecalis; total serum proteins 5.8 Gm. with albumin fraction 2.8 Gm. and the globulin fraction 3.0 Gm. per 100 cc.; serum calcium 8.6 Gm. and serum phosphorus 6.4 Gm. per 100 cc.; alkaline phosphatase 4.4 Bodansky units; acid phosphatase 0.4 Bodansky units; urinary gonadotrophin assay was less than 6 mouse units per 24 hours; 17-ketosteroid assay 2.2 mg. in 24 hours; 6 per cent sulfobromophthalein (bromsulphalein®) sodium was retained in 30 minutes.

The previous roentgen examination of the patient's kidneys at the Veterans' Hospital was reported to have shown a nonfunctioning right kidney and a minimal left hydronephrosis by intravenous urogram; the chest roentgenogram was reported normal. On admission, the initial roentgenogram of the kidneys was normal, and the intravenous urogram showed minimal iodopyracet (diodrast®) clearance within one hour. The chest roentgenogram revealed prominent lung markings in the first left anterior interspace, consistent with an old inflammatory process, and bilateral sharply demarcated shadows in both midlung fields, which were believed to be breasts. The skull roentgenograms showed bone metastasis extending to the calvarium but were otherwise normal.

During the patient's hospitalization breast biopsies were performed, and histopathological examination by Dr. John B. Hazard, Department of Pathology, revealed the specimens from

both right and left breasts to be similar. The sections were comprised principally of neoplasm formed by small epithelial cells occurring for the most part as single units distributed through a loosely arranged myxomatous connective tissue stroma but also occurring as short cords and small groups. There was dedifferentiation evidenced by variation in the size and staining of the nuclei and the frequent mitoses. The section of the right breast included a section of skin, the corium of which contained ill defined foci of neoplasm. The pathological diagnosis was bilateral carcinoma simplex of the male breast, a grade 4 dedifferentiation. Biopsies of the testes were also performed, and pathological examination revealed fibrosis of the seminiferous tubules, absence of the gametogenic elements and vacuolation of Sertoli cells. No Leydig cells were identified. A needle biopsy of the prostate was unsuccessful on two occasions. The patient's hospital course has been one of progressive weakness with a gradual elevation of the blood urea.

COMMENT

On the basis of a single case it is not possible for one to evaluate fully the carcinogenic effect of estrogens on male breast tissue. The fact remains, however, that in this instance the breast malignancies were bilateral new growths, histologically different from the primary neoplasm; also there was no breast disease noted prior to the administration of estrogens. The family history of breast and other carcinomas suggests the possibility of activation of male breast malignancy in a patient having a family strain of relatively high cancer incidence. From

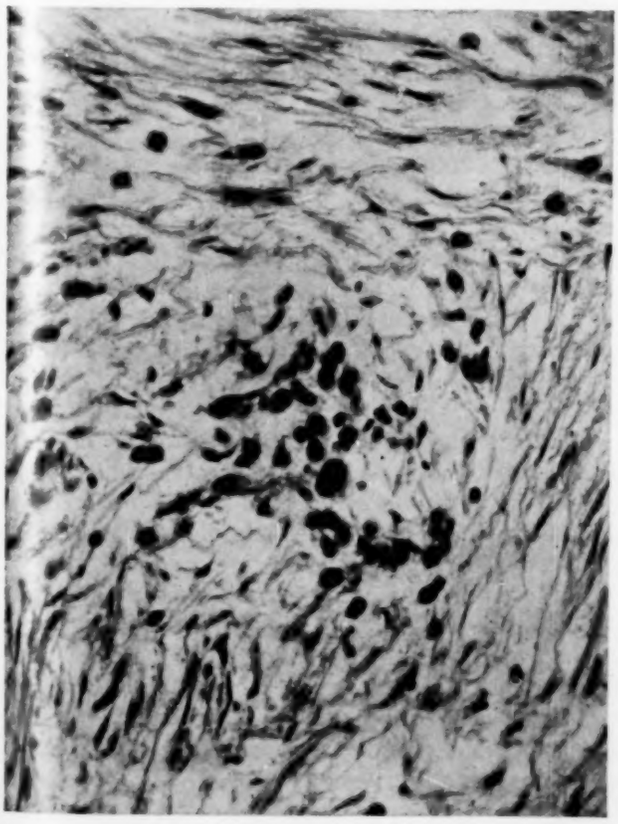


Fig. 3.—Right breast (× 225). Section of carcinoma simplex shows small epithelial cells occurring singly and in short cords and groups in loose stroma.

the experience in this case it is believed that all male patients receiving estrogen therapy should be questioned about their family history relative to breast malignancy and that the character of the breasts should be carefully evaluated prior to and at regular intervals during estrogen therapy.

In the cases we reviewed of breast malignancy in men after estrogen therapy, there is insufficient evidence to conclude that the breast carcinomas were primary in every case, and, with the exception of the case of Howard and Grosjean, the interpretation of the actual relationship of the breast cancer and estrogen therapy is difficult.

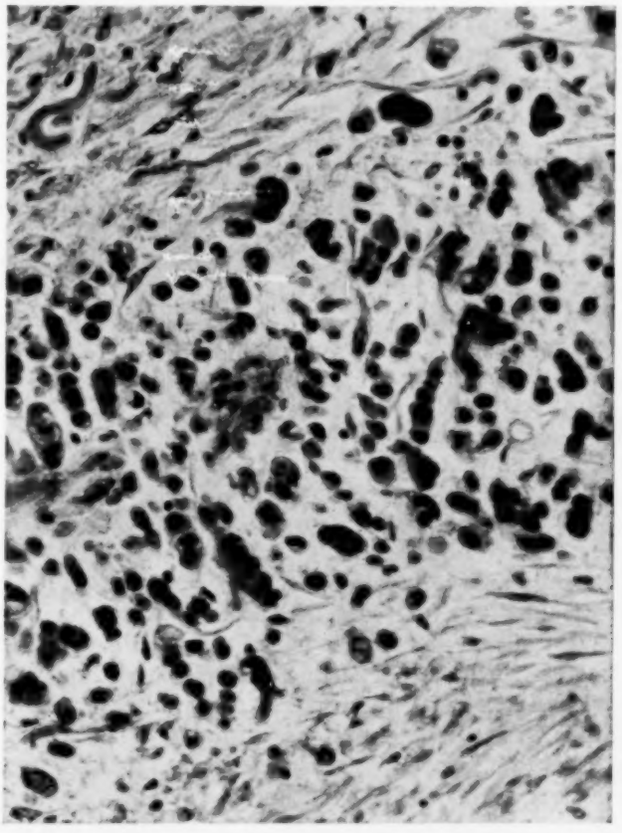


Fig. 4.—Left breast (× 225). Section of carcinoma simplex is similar to that of right breast.

SUMMARY

A case of bilateral male breast carcinoma after estrogen therapy is reported in a patient with carcinoma of the urinary bladder and with a family history of breast carcinoma.

Ten Extra Miles a Day.—All methods of reducing the obese of excess fat are effective only insofar as they aid in producing and maintaining a calorie deficit. A calorie deficit can be obtained either by increasing the calorie expenditure or by decreasing the calorie intake, or by both methods. There is an exaggerated idea of the value of exercise in producing a calorie deficit. For the average person a walk of one mile at the rate of 2 miles per hour leads to the expenditure of 100 extra calories. Therefore, to lose 2 pounds of adipose tissue by this type of exercise alone, the average person would have to walk 10 extra miles each day for one week without increasing the food intake. This is difficult because exercise usually increases the appetite. Therefore a considerable and sustained increase in calorie expenditure by exercise for most obese persons is impractical. On the other hand, to lose 2 pounds of adipose tissue by diet while maintaining the same calorie expenditure—that is, without additional exercise—the obese person needs to eat daily for one week 1,000 calories less than the calorie expenditure.—The "Performance Index" as a Method for Estimating Effectiveness of Reducing Regimens, Norman Jolliffe and Elmer Alpert, *Postgraduate Medicine*, February 1951.

PROGRESSIVE SPINAL CORD DISEASE

SYNDROMES ASSOCIATED WITH HERNIATION OF CERVICAL INTERVERTEBRAL DISKS

Kenneth J. Strully, M.D., Sidney W. Gross, M.D., Joel Schwartzman, M.D.
and
Theodore J. C. von Storch, M.D., New York

The striking similarity between the signs and symptoms of certain diffuse degenerative disorders of the spinal cord and those due to herniation of cervical intervertebral disks was first emphasized by Stookey in 1928 and again in 1940.[1] Confirmation of these observations has come from many sources. The means whereby midline pressure may produce such syndromes was described by Kahn in 1947.[2] Bucy and his associates reviewed the subject in 1948 [3] and presented four cases of herniation of cervical intervertebral disk simulating such degenerative disorders of the spinal cord. Den Hartog Jager and Moffie in 1949 [4] reported nine patients with similar cases treated during the preceding nine years in the neurological clinic at the Wilhelmina-Gasthuis, Amsterdam University. In spite of these reports, too little attention has been paid to this important subject.

The purpose of this report is to reemphasize the necessity for the early recognition and treatment of surgically amenable lesions causing compression of the cervical portion of the spinal cord. This compression may result in syndromes closely resembling certain progressive diseases affecting the spinal cord such as multiple sclerosis, combined systems disease, amyotrophic lateral sclerosis or syringomyelia. Careful scrutiny will, however, reveal each such syndrome to be atypical in some significant respect; for example, absence of signs or symptoms due exclusively to a disease condition above the foramen magnum or absence of one or more characteristics of each syndrome. At times a history of injury can be elicited. Usually there is no such history, no pain or tenderness and no other evidence of a cervical mass.

The cases herein described differ somewhat from those previously reported. In our series the symptoms were insidious in onset, and the course was unusually prolonged. One of our patients has a history of remissive progression for 16 years. The implications of this are tragic.

We have recently studied six cases of surgical lesions simulating various degenerative diseases. These have been considered with some authority to belong in the following categories: unspecified degenerative cord disease, 1 case; syringomyelia, 1 case; multiple sclerosis, 2 cases; amyotrophic lateral sclerosis, 1 case, and combined systems disease, 1 case.

Certain clinical facts common to these cases require considerable emphasis. Analysis of the course of the disorder revealed the symptoms to be progressive, without significant remission. The signs were almost indistinguishable from those of the disorders mentioned above. However, at no time did any of these patients complain of symptoms or exhibit signs of lesions of the nervous system above the cervical portion of the spinal cord. One patient in whom amyotrophic lateral sclerosis had been previously diagnosed presented classical fasciculations in all four extremities and over the trunk. This patient has not been benefited by spinal cord decompression.

The most important factor in all these cases is a negative one, that is, the absence of any signs or symptoms referable to the supracervical neuraxis. The spinal fluid studies revealed an elevation of total protein in four of the six patients. In none was there any evidence of block. Osteoarthritic lipping associated with a narrow intervertebral space was demonstrated by roentgen examination in five patients. It is possible that more significance might be placed on roentgen demonstration of narrowed interspaces associated with osteoarthritis. It is not unlikely that the osteoarthritis might well be the result of immobility due to an intervertebral disease condition and not merely an unrelated finding as is commonly assumed.

Because of some uncertainty of diagnosis, ethyl iodophenylundecylate (pantopaque®) myelography was performed in all cases. The radiographic evidence varied from equivocal alterations in the spinal cord to alterations indicative of a moderately large mass. When the roentgenographic studies were definitive, surgical treatment was instituted without delay. However, considerable deliberation was required when the significance of the roentgenograms was debatable. In these instances the histories, clinical findings and prognoses with and without surgical treatment were carefully evaluated.

Cervical laminectomies were performed in all cases and revealed old calcified herniated disks. These were associated with osteoarthritic lipping of the adjacent vertebral margins. The cord was displaced dorsally with a V-shaped angulation clearly seen at the level of the bony lesions. In one of these patients in whom

From the Divisions of Neuropsychiatry and Surgery of the Montefiore Hospital for Chronic Diseases.

Dr. Leo Davidoff gave his permission to include the data on one patient (B. Z.) studied by us but operated on by him at Beth Israel Hospital. Dr. Davidoff not only freed the cord but also removed some of the ruptured disk.

Adjunct attending neurosurgeon (Dr. Strully); attending neurosurgeon (Dr. Gross); associate attending in the Department of Diagnostic Roentgenology (Dr. Schwartzman); Chief of the Division of Neuropsychiatry and Professor of Clinical Neurology, Columbia University College of Physicians and Surgeons (Dr. von Storch).

1. Stookey, B.: Compression of the Spinal Cord Due to Ventral Extradural Cervical Chondromas: Diagnosis and Surgical Treatment, Arch. Neurol. & Psychiat. **20**: 275 (Aug.) 1928. Compression of Spinal Cord and Nerve Roots by Herniation of the Nucleus Pulposus in the Cervical Region, Arch. Surg. **40**: 417 (March) 1940.

2. Kahn, E. A.: The Role of the Dentate Ligaments in Spinal Cord Compression and the Syndrome of Lateral Sclerosis, J. Neurosurg. **4**: 191, 1947.

3. Bucy, P. C.; Heimburger, R. F., and Oberhill, H. R.: Compression of the Cervical Spinal Cord by Herniated Intervertebral Discs, P. Neurosurg. **5**: 471, 1948.

4. den Hartog Jager, W. A., and Moffie, D.: Medullary Syndromes Simulating Multiple Sclerosis, Amyotrophic Lateral Sclerosis, Subacute Combined Degeneration of the Cord and Syringomyelia, Caused by Herniation of the Intervertebral Cervical Disk, Folia Psychiat. Neurol. et Neurochir. neerl. **52**: 137, 1949.

the diagnosis had been syringomyelia, there was a distinct bluish midline discoloration of the cord, extending above and below the area of angulation. Palpation of this segment suggested central softening. The patient has shown some improvement following operation. Another patient showed, in addition to the angulation, a rotation of the cord backward on the left with displacement to that side caused by a calcified mass located chiefly on the left.

Surgical treatment was seriously limited by the nature of the lesions encountered. The serious damage that might have been produced in an already compromised cord in trying to remove bony material was a limiting factor. In all but one patient (B. Z.) operation was limited to decompression of the cord and section of the dentate ligaments. The latter step relieved the

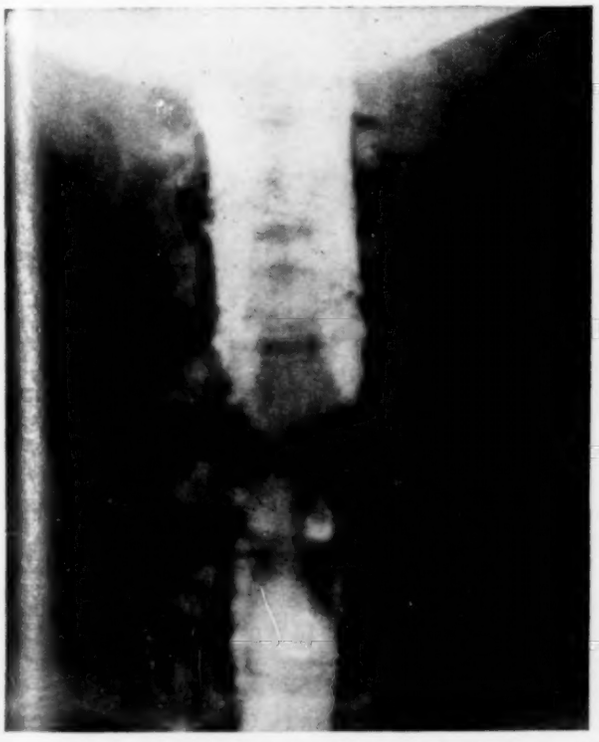


Fig. 1.—Large "hourglass" filling defect at the fifth and sixth cervical segments of the spinal cord in patient E. S.

traction on the cord, which probably produced the symptoms in the manner described by Kahn.

Because of the prolonged disability before operation and the limited surgical therapy, we did not expect much improvement, but we do hope for prevention of further progress in these cases. Furthermore, the period of time that has elapsed since operation has been much too short for proper evaluation of the surgical treatment. However, we feel that four patients have shown some improvement.

Obviously, we would not be justified in stating that the clinical syndromes in these cases were entirely the result of cord compression produced by the herniated disks. The presence of the ruptured disks may have been coincidental. They may even have followed an injury caused by the basic neurogenic disorders.

It is, however, our present contention that the cord compression caused by the herniated intervertebral disks could indeed be a reasonable cause for the clinical syndromes found in these cases. This opinion is based on the observed condition of the cord at operation; the cord anatomy and mechanisms as known to us and described by Kahn; the absence of supra-

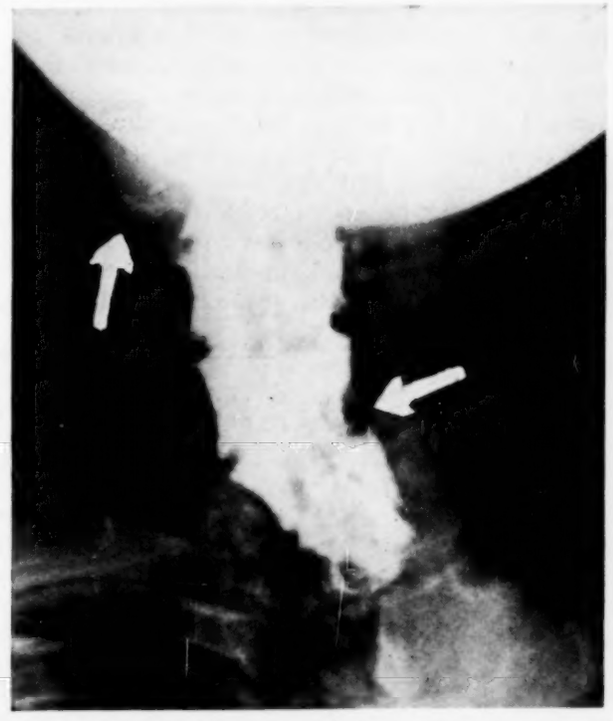


Fig. 2.—Small filling defect on the left side at the seventh cervical and first thoracic segments complicated by marked scoliosis in patient A. M.

Fig. 3.—Thinning of opaque medium at fifth and sixth segments and adjacent areas in patient J. R.

cervical signs and symptoms; the atypical syndromes in each case; the apparent chronicity of both the clinical course and observed lesions; reports of similar situations by others, and finally, improvement in several of our patients following operation.

SUMMARY AND CONCLUSIONS

Six cases of compression of the cervical cord have been presented in order to reemphasize that the clinical syndromes caused by cervical cord compression may simulate various degenerative disorders of the spinal cord. The previous diagnoses of "degenerative cord disease," syringomyelia, multiple sclerosis, amyotrophic lateral sclerosis and combined systems disease had discouraged any active therapy. All, however, were slightly atypical syndromes. In all of the patients the course was progressive and the signs and symptoms could readily be accounted for by lesions below the foramen magnum. In four patients there was an elevation of total protein in the spinal fluid. In five, there was osteoarthritic lipping and a narrow intervertebral space at the level of the lesion. In five, ethyl iodophenylundecylate myelography of the cervical region of the spinal cord revealed a moderate or minimal defect at the level of the lesion. In all six patients the pathological process was a calcified, herniated intervertebral disk, associated with osteoarthritic lipping in such fashion as to produce a definite compression and angulation of the cord. Because of the nature of the lesions, surgical intervention was in all but one case (B. Z.) limited to freeing the cord by section of the dentate ligaments. It is much too early to report the final results of operation in these cases. Nevertheless, some improvement has already been evidenced in four patients even at this early date, from three to seven months after operation.

EYE EMERGENCIES IN INDUSTRY

FIRST AID TREATMENT BY THE PHYSICIAN

Arthur Alexander Knapp, M.D., New York

Eye emergencies in industry have assumed a tremendous importance because of their number and their cost to management and labor. It is far better to prevent than to treat these emergencies, but this paper is concerned with those unavoidable accidents that already have occurred. In these instances proper first aid treatment by the attending physician will save millions of dollars and thousands of man hours and prevent irreparable mental and physical injury to the injured person.

Before discussing the actual accident, it is pertinent to recall certain physical characteristics of the eye area which aid in the prevention of damage to the eye itself. The strong bony orbit encases the soft globe and provides a great deal of protection. Witness the frequency with which a prize fighter is struck in the eye but how seldom there is injury to it. Other protective features besides this bony encasement, which usually preserve the eye in a contusion of this type, include the large pad of fat directly behind the globe, the ligaments and muscles surrounding the eye and the intrinsically resilient eyeball—all of which serve as a mattress to cushion and absorb any traumatism transmitted to them. The corneal reflex, too, reduces the harmful effects of contact violence to the underlying structures, but additionally, it prevents foreign bodies from flying into the eye. This reflex, when active, serves admirably. Unfortunately, however, many people do not possess the standardized normal reflex. They have a hypoaesthesia of the cornea, a partial to complete anaesthesia of the corneal branch of the fifth nerve, with a resultant slow reflex. They often get foreign bodies in their eyes. Unless there are other concomitant findings, I do not consider this poor reflex to be pathological. Nevertheless, when present, it does decrease the defenses of the eye. The eyebrows and eyelashes also help to keep foreign bodies out of the eye. Anteriorly, however, the globe on the temporal side is more exposed; therefore, it is in this area that it is particularly vulnerable to injury by both small and large objects. Actually we do find more of the results of traumatism in this region. In the presence of an injury to the eyeball itself, there is still another basic protection to sight, that protection afforded to the most delicate tissues of the visual apparatus, the retina and optic nerve. Anatomically, the retina and optic nerve are so situated as to be the most shielded structures of the eye. Every other part of the eye and the orbit protects them.

The following statistics give an average percentage of the types of accidents to the eye which may be expected in industry: flying bodies, 80 per cent; tools or parts of machinery, 8 per cent; splashing liquids, 7 per cent; explosions, 2.5 per cent; falls, 2 per cent, and infections, 0.5 per cent. Once an injury to the eyeball proper has occurred, without its destruction, particular attention must be given to the ciliary body, that part of the uvea or middle coat of the eye which joins the iris to the choroid. The ciliary body is the great danger zone. It is trauma to the ciliary body, more than to any other part of the globe, which may give rise to sympathetic ophthalmia and the loss of both eyes.

Ocular emergencies may involve the globe, its adnexa or both. Correct and immediate attention is indispensable to an uneventful recovery. Without delay, one must try to prevent or control potential body infection, so frequently brought in by the destructive agent. The same surgical care that would be employed elsewhere must be given a wound about the eye, perhaps with a little more gentleness. Systemic antibiotic or other therapy may be administered as the occasion warrants. With all eye injuries the psychogenic factor demands much attention, for the emotional disturbance is usually out of all proportion to the damage. Therefore the patient must be calmed, set at ease at once and given a sedative immediately.

Lecture given at School of Public Health, Columbia University, under the auspices of Commandant Third Naval District and Columbia University on Sept. 22, 1949. Dr. Knapp holds rank of Captain (MC), U. S. N. R. and is Impartial Eye Specialist to the Workmen's Compensation Board, New York State.

EMERGENCIES INVOLVING THE ADNEXA OF THE EYE

Industrially, these medical emergencies include (1) ultraviolet burns; (2) chemical burns; (3) foreign bodies; (4) wounds, and (5) allergies.

Ultraviolet Burns.—Ultraviolet radiation from the sun or from one of the different lamps in use frequently causes ultraviolet burns of the eyelid skin. As a rule, the burn is part of a more generalized one involving the body. Emergency treatment is the same as that for burns elsewhere. The globe itself may be ignored so far as any application to the skin of the lids is concerned but it is well not to permit any of the applied medication to get into the eye. If it does irrigate immediately with water, normal saline or boric acid solution. A drop of butacaine (butyn®) sulfate, tetracaine (pontocaine®) hydrochloride or other local eye anaesthetic will take care of any ocular discomfort.

Chemical Burns.—Direct treatment of a chemical burn, however, differs somewhat from the treatment of the ultraviolet burn. The chemical burn may be much more severe. Here we are dealing with an embedded foreign chemical, some of which may be removed mechanically and/or washed out directly after the accident. Therefore, as soon as possible following the injury the area should be flushed with water continuously for many minutes or the patient's head immersed in a pail of water. That type of burn treatment which has been found effective in other areas of the body should be continued. In a deeper burn of either or both lids it is a good plan to have an ophthalmologist see the patient soon after the injury, so that contractions might be prevented or an early graft might be done. Some burns can distort a person's face so as to make him a physical as well as a mental cripple for life. No late plastic repair, no matter how expert, can match immediate optimum therapy.

Foreign Bodies.—Extraocular foreign bodies per se and/or the accompanying psychogenic factors call for emergent therapy. When the foreign bodies are on the surface of the skin they can merely be brushed off. But when they are subcutaneous, they should be extracted through the original wound or through an overlying incision. A frequently observed subcutaneous foreign body of the eyelids is that seen in coal miners. A small chip of coal penetrates the surface and becomes embedded just below it, giving the appearance of a blue object rather than a black one. This blueness is seen because of the same physical phenomenon which produces the blue color in the wrist vein and in the blue iris. The explanation is that any opaque material covered by a more or less transparent tissue appears blue. Overseas I have seen a number of men with subcutaneous gun powder foreign bodies, the result of being shot at close range. The powder was black, but it appeared blue through the skin. In cases of this type the powder can be removed readily by making use of a small sharp scalpel. As a rule, no scarring results. Different foreign bodies may be lodged in the deep lid structures or in other tissues surrounding the globe. Should the wound of entrance be evident and the removal of the foreign body apparently presents no hazard, a forceps or other instrument may be used to extract it. In the event that there is a danger, it is usually inadvisable to attempt its withdrawal because a foreign body in the orbit but outside of the globe generally is well borne. Rarely a bullet or other foreign missile may cause a double perforation of the globe and then come to rest behind it; unless it can be simply removed, let nature encapsulate it. Manipulation in this area may give rise to infection any type of which could be serious because of potential meningitis.

Wounds.—There are times when a patient will present himself with an open wound of the orbit, not involving the eyeball. The wound may be an incised or a lacerated one. Immediate cleansing, application of an antibiotic and covering it with a moist sterile gauze pad is good treatment if an oculist is available within a matter of hours. An antibiotic and tetanus antitoxin may be administered in the meantime. If the specialist is not available, in order to avoid healing by secondary intention with its consequent disfigurement, direct careful suturing is indicated. When skin alone is involved twisted silk may be used, if promptly procured, but in deeper wounds, the deep structures should be sutured with catgut and the skin closed with silk. In the repair of these wounds one should always try for an overcorrection and employ enough sutures to give fine coaptation of the wound edges, along the lines of cleavage when possible. Otherwise, lid deformities may develop. In the way of further treatment, the sutures may be removed at any time after 48 hours whenever the wound is sufficiently well healed. Fundamentally, the closure for an incised or a lacerated wound is similar. Given a multiple lacerated wound, however, treatment depends on whether the upper or the lower lid is involved. In the repair of the skin of the upper lid, surprisingly enough, most of it may be sacrificed because of the excellent and rapid regeneration; but to restore the lower lid, unfortunately, this rule does not hold since only a small area of the skin can be lost without creating a greater deformity—cicatricial ectropion. Therefore, as much lower lid skin as possible should be preserved. A firm dressing should always be applied for at least two days. It is comforting to know that no matter how unsatisfactory the suture line may appear, rarely is a scar of the eyelids visible when healing is by first intention along the cleavage lines. Thus, the indicated treatment for extraocular emergencies is seen to be comparatively simple, and yet these simple procedures may well serve to save many a person great future anxiety and disfigurement. Both the gain of dollars and the thousands of man hours to industry are added advantages.

EYE EMERGENCIES INVOLVING THE EYEBALL

Similar types of emergencies arise for the eye proper, and similar principles of treatment prevail. Since specific therapy will differ somewhat, the particular treatment for each condition will be outlined.

Ultraviolet Burns.—A patient may complain of an ultraviolet burn of the globe caused by a welding light flash, the sun or a sun lamp. A flash burn is the most frequent eye emergency in a welding industry. Several hours after the exposure, marked photophobia and blepharospasm develop. Pain comes on and it can be very

severe, chiefly due to iris spasm. An anesthetic eye ointment instilled into the conjunctival sac every two hours, up to several doses, generally will give the necessary relief. Personally, I prefer also to instil epinephrine and homatropine hydrochloride. At the New York Navy Yard during the last war there were many flash burns of the eye all of which were treated in this fashion with quick and complete cure. For additional relief iced boric compresses, 15 minutes four times a day, may be prescribed.

Chemical Burns.—Chemical burns of the eye deserve the same treatment as that just described. Also, any of the chemical present should be removed mechanically and the eye flushed zealously for a long period of time. This should be carried on with water, more water and more water. A mild anesthetic should be instilled, 1 per cent atropine, and an antiseptic ointment. Penicillin or one of the other newer antibiotics may be substituted for the antiseptic ointment. For increased healing follow with cod liver oil drops, 1 drop four times daily. An antibiotic may be injected intramuscularly. Chemical burns of the eye reveal their greatest damage days after the original accident, in some cases they become so serious that they cause atrophy of the globe, with subsequent enucleation. At Sing Sing Prison Hospital during the last 17 years I have seen a number of these serious late chemical burns of the eye. While they usually were not industrial in origin, the chemical and its effects are the same as in industry. Principally these accidents were observed in the Negro inmates as an aftermath of a love affair, a jealous woman scorned having thrown lye into the eye of her unfaithful lover. The corneal reflex in these persons either was not sufficiently active to prevent the lye from entering the eyeball, or the lid reflex of amazement, that startled wide eyed expression, superseded the corneal reflex in these persons. Once in the eye, the chemical was most destructive. Many developed atrophic globes and/or had their eyes enucleated. A few lucky ones got by with synechiae, that is, adhesions between the eyeball and the eyelids. To prevent these disturbing adhesions between the eyelids and the eyeball a conformer may be inserted shortly after the damage. This is a thin piece of glass or plastic, conforming to the front surface of the eyeball; it is slipped in between the eyelids and globe to separate the raw surfaces until epithelialization has taken place, after which time it is removed.

Parenthetically, it is interesting to note that some persons after a chemical burn of the eye exhibit a central corneal opacity, an opacity which may or may not be blinding. Interference with vision depends upon the extent and depth of the opacity. If it completely occludes the cornea or the pupillary area, it is blinding. On the other hand, if it only partially occludes the pupil, then so called normal vision, 20/20, can still be expected. Other industrial mishaps terminate in similar scars. In all of these instances I have obtained excellent results with simple corneal tattooing, alone or in combination with optical iridectomy.[1] When the opacity only partially invades the pupillary zone, tattooing gives a good result cosmetically, and at the same time will improve the acuity. In every case of incomplete corneal opacity entirely occluding the pupillary area and causing sufficient industrial blindness, I regularly advise optical iridectomy with tattooing rather than the less successful corneal graft.

Foreign Bodies.—With regard to foreign bodies, it is interesting to note that in mechanical industries more foreign bodies fly into the left than into the right eye. This is explained by the fact that most people are right handed and that the angle of incidence equals the angle of reflection; that is, the angle of a hammer at work equals the angle at which a chipped foreign body will fly into the left eye. Foreign bodies on the eyeball may be removed after instillation of a local anesthetic and light brushing with an applicator dipped in an antiseptic solution. Often enough even the light brush is unnecessary since the mere instillation of drops will wash away the foreign body. An antiseptic ointment may be placed in the conjunctival sac. If the foreign body is nonmetallic, as a rule no further treatment is indicated; but if it is metallic, one should check for the presence of a rust ring with a magnifying glass. Should rust be present, removal should be attempted by gently curetting it; if the operator is sufficiently adept, a dental bur may be used. It may be necessary to curette a rust ring two or three times before it is completely removed. The eye should be kept under anesthesia during all corneal surgery. In a recent report [2] I showed that it is unnecessary after the removal of an embedded corneal foreign body to cover or bandage the eye. Healing is not interfered with. Instillation of an anesthetic eye ointment will permit the patient to return to work and continue with binocular vision. When a small subconjunctival hemorrhage follows an accident, one should look for a foreign body, cautiously probe for one. The eye should be checked with the ophthalmoscope and a roentgenogram ordered, for rarely a foreign body may perforate the globe and give no symptoms whatever, the perforation not even being revealed by examination with magnification. A foreign body within the eyeball generally requires highly specialized care. It is always potentially disastrous and its removal fraught with danger. It is to be remembered, too, that a capsule quickly envelops the foreign body and that this capsule sets up tremendous magnetic resistance. Therefore, intraocular foreign bodies should be regarded as emergencies. Whenever the site of entrance is visible, a magnet should be applied to that spot without delay, in the hope that the body is metallic and magnetic. If an electromagnet is employed place all watches in another room before turning on the current. In the event that the magnet does attract a metallic sliver, the operator as well as the patient will have a deep sense of satisfaction. Blindness will have been prevented.

Wounds.—Contused wounds of the globe most frequently do not give rise to permanent damage. Recall the many contused wounds of the globe without even a "black eye." When a black eye does develop, there are rarely more serious intraocular disorders present. Subconjunctival hemorrhage heals in 10 to 14 days and only derives importance from its appearance. Com-

1. Knapp, A. A.: Corneal Graft or Tattooing with Iridectomy? U. S. Nav. M. Bull. **42**: 1366-1369, 1944.
2. Knapp, A. A.: After-Care of Corneal Foreign Bodies, J. A. M. A. **132**: 809 (Nov. 30) 1946.

presses and astringent drops will favor its absorption. There is seldom further damage, such as rupture of the sphincter muscle of the iris, edema of the macula, retinal hemorrhage or detachment or a choroidal tear. A patient with a severely contused wound may be put to bed for 24 hours and a drop of 1 per cent atropine

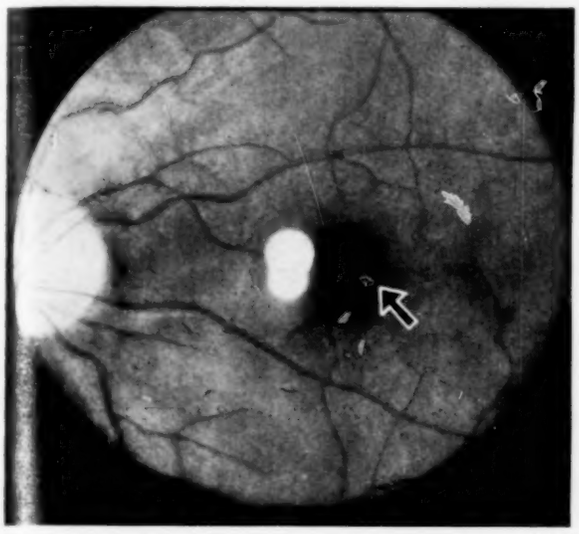


Fig. 1.—Hole in macula showing destruction of inner layers of retina with 20/60 vision.

sulfate solution instilled into the injured eye. After 24 hours, if there are no subjective or objective morbid effects, the patient should be permitted his normal routine.

Though of infrequent occurrence, a case in point is interesting: (1) to demonstrate that partial industrial blindness due to traumatic chorioretinitis may be entirely cured with the return of normal or 20/20 vision and (2) to display another effect of a contusion. Figure 1 is a photograph of a kodachrome slide of the right fundus oculi of an automobile mechanic who suffered a contused wound of the globe. Apart from the manifest mild external trauma, an incomplete hole in the macula developed with the loss of some of the inner retinal layers and an active central chorioretinitis. There was a partial loss of vision: 20/60. Figure 2 represents the same fundus oculi after the indicated treatment. Absolute regeneration of the retina has taken place with no scarring. Actually it is a complete cure with the return of 20/20 vision. Similar retinal regeneration and actual cure may occur in cases of complete industrial blindness due to trauma or disease in which instances vision may be remarkably improved from 20/200 or even less, to the normal 20/20.[3]

Incised or lacerated wounds of the conjunctiva ordinarily may be sutured or left gaping since the membrane possesses tremendous reparative power. An antiseptic ointment should be applied and the eye covered for 24 to 48 hours, after which period there will be splendid healing. Nonperforating incised and lacerated wounds of the cornea and sclera are treated palliatively. Without complication, rest, atropine, antiseptic ointment and compresses are all that are necessary. Prophylactically, give an antibiotic.

Perforation of the globe regularly is considered dangerous, not only because of potential blindness in the affected eye but also because of the possible onset of sympathetic ophthalmia in the fellow eye. If an oculist is available, he should be called. Should you temporarily be on your own, don't hesitate, but place the patient at absolute rest, instil a liquid anesthetic followed by atropine and cleanse the wound carefully. Next, drops of an ophthalmic antibiotic solution may be given and both globes loosely covered, for if one eye remains free the patient surely will use it and motility of this eyeball necessarily means motility of the injured one, a decided contraindication. Administer penicillin intramuscularly or administer some other antibiotic and tetanus antitoxin if indicated. With the patient's eyes at rest, one may wait for hours, in some cases even for days, for the specialist. Above all, do not disturb the patient, not even to remove his clothing. In the event that you alone are obliged to carry on, then before dressing the eye, most gingerly retract the lids with or without an instrument, guarding against the slightest pressure and inspect the wound for any herniation of the contents of the globe. If a hernia is present, grasp the mass with a small forceps, put exceedingly mild traction on it and excise it flush with the eyeball. Then proceed as above.

Contrary to current opinion I have not seen sympathetic ophthalmia arise following the immediate and clean excision of portions of the ciliary body after perforated wounds in that area. An illustrative and somewhat unusual case of a perforated wound in the danger zone, the ciliary body region, may be cited: a bird bite of the eye at the New York World's Fair. While lifting a fish heron, a large bird, off the floor for transportation to the New York Zoo, the zoo director, believing that a

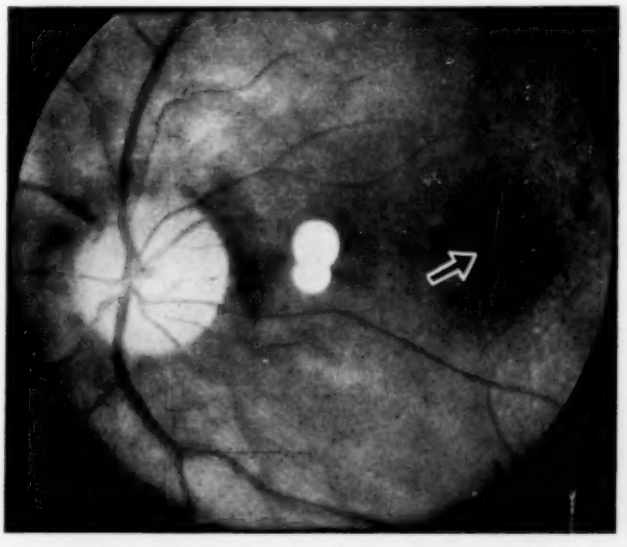


Fig. 2.—Macula after therapy revealing complete regeneration of the retina with 20/20 vision.

bird off balance could not strike, was surprisingly bitten in his right eye. Without delay the ambulance rushed him to my office. Examination revealed an irregular perforation of the eyeball over the ciliary body with a prolapse of part of the body. In the hospital, the herniated mass was excised, the patient made a good recov-

3. Knapp, A. A.: Los motivos universales de la ceguera y su tratamiento, América clín. **16**: 218-222, 1950.

ery, and no sympathetic ophthalmia developed. Two points may be stressed. First, no matter how hopeless a perforated globe may first appear, do not enucleate it. Injured eyes may change radically in 24 hours. Second, since sympathetic ophthalmia never occurs within one week and practically never within two, palliative therapy may be continued for at least two weeks, provided that healing is progressive. However, after a week has elapsed and the eye remains blind and healing is unsatisfactory, enucleation should be carried out.

ALLERGIES

Sometimes an employee or a bluejacket will seek care for an apparent emergency of the eye. There will be marked swelling and redness of the lids and/or globe along with photophobia, itching and a slight stringy discharge of the conjunctiva. The patient will be much concerned over its seriousness. In all probability, he will be completely unaware of its allergic basis. He may give you a history of direct allergy to a certain substance but, most frequently, it will take a little questioning before any suspicion of allergy arises. Nevertheless, the diagnosis of ocular allergy is usually easy. The points of distinction are these: the abrupt appearance and disappearance of symptoms, sometimes traced to the exciting agent, the withdrawal of which proves curative; the presence of eosinophiles; the negative bacteriologic findings; the frequent association with other allergic phenomena; the demonstration of positive sensitization tests and immediate temporary relief afforded by epinephrine or ephedrine. Pathognomonically, in allergic conjunctivitis there will be a stringy or rubbery discharge which commonly is recovered at the medial canthi, occasionally over the surface of the conjunctiva. Often, part of the discharge becomes attached to the applicator while the remainder adheres to the eye until enough traction is developed to pull it away from the globe. As the rest of the discharge separates, it snaps up to the applicator.

Most of the ocular allergies are part and parcel of a more generalized susceptibility, although clinically the allergy may be confined solely to the eyes. In extraordinary cases, the patient will be obliged to seek other employment. While this appears logical, I have never had a patient under my care who had been obliged to make a change. Palliative local therapy is secondary to systemic therapy. Locally there is but little to be done. Classically, in the case of a known allergen—rare indeed considering the many patients seen—have the person avoid contact. In the inflammatory stage about the eye the use of water on the allergic skin should be restricted; the skin of the lids and/or conjunctiva painted with silver nitrate solution and a zinc oxide ointment for the skin prescribed. Oral administration of sufficient vitamin D and sufficient calcium is the treatment of choice.[4] Until this medication takes effect, as a rule within three weeks, palliative eye drops and/or an eye wash may be employed. No other therapy has given comparable results. There is both subjective and objective improvement. Practically every person gets decided relief.

COMMENT

In closing, it might be mentioned that every industrial physician will have emergencies due to extraneous causes, nonindustrial. Seldom will these emergencies require emergent treatment by him; rather, they can be delegated to the care of the nonindustrial private practitioner.

907 Fifth Avenue at 72nd Street.

4. Knapp, A. A.: (*a*) Vitamin D in Vernal Catarrh, J. Allergy **4**: 407-410, 1942; (*b*) Calcium Equivalents of Preparations, Am. J. Ophth. **23**: 468, 1940.

PLASMA L. E. TEST IN SYSTEMIC LUPUS ERYTHEMATOSUS

STUDY OF TWENTY-THREE PATIENTS WITH POSITIVE L. E. TESTS

John R. Haserick, M.D., Cleveland

The original intention of this study was to evaluate the plasma L. E. test [1] as a diagnostic measure in acute disseminated lupus erythematosus. As it proceeded, patients with classic examples of the disease were found to have consistently positive tests. However, the plasma L. E. test was found also to be positive in less fulminating cases, many of which presented clinical histories which were not typical for acute disseminated lupus erythematosus. For example, unusual combinations of diseases such as rheumatoid arthritis and epilepsy were noted in some patients with positive plasma L. E. tests.

From the Cleveland Clinic and the Frank E. Bunts Educational Institute, Department of Dermatology, E. W. Netherton, M.D., chief.

This article has been abbreviated for publication in THE JOURNAL by omission of tables 2 and 3. These will appear in the author's reprints.

Read before the Section on Dermatology and Syphilology at the Ninety-Ninth Annual Session of the American Medical Association, San Francisco, June 28, 1950.

1. Haserick, J. R., and Bortz, D. W.: New Diagnostic Test for Acute Disseminated Lupus Erythematosus, Cleveland Clin. Quart. **16**: 158, 1949.

2. Hargraves, M. M.; Richmond, H., and Morton, R.: Presentation of 2 Bone Marrow Elements: "Tart" Cell and "L. E." Cell, Proc. Staff Meet., Mayo Clin. **23**: 25, 1948.

These clinical variations from the typical conception of acute disseminated lupus erythematosus suggested two important possibilities: first, that the plasma L. E. test is positive in diseases other than acute disseminated lupus erythematosus, i. e., that false positive L. E. tests can occur, and/or, second, that acute disseminated lupus erythematosus is actually a frequent, protean disease with atypical phases which may be detected with certainty by the plasma L. E. Test.

In this report an attempt is made to answer these questions as the result of a study of the clinical and laboratory data concerning the first 23 patients who showed positive plasma L. E. tests at the Cleveland Clinic.

HISTORY OF PLASMA L. E. TEST

Hargraves, Richmond and Morton [2] first observed the L. E. phenomenon, i. e., rosettes of clumped leukocytes and L. E. cells, in the bone marrow of patients with systemic lupus erythematosus. Their observation was cor-

roborated by Haserick and Sundberg,[3] who indicated the value of this procedure as a diagnostic test for the disease. However, further experience with the use of the patient's own marrow revealed two difficulties: first, the marrow was often hypoplastic and gave a false negative result, and, second, the procedure often was tolerated poorly by an extremely ill patient.

An L. E. test aimed at overcoming these disadvantages was developed at the Cleveland Clinic and submitted for publication on March 25, 1949.[4] Almost simultaneously, Hargraves reported similar results.[5] In these tests the plasma of the patient suspected of having systemic lupus erythematosus is mixed with the bone marrow cells from another person: the L. E. phenomenon occurs exactly as if the patient's own marrow had been used. This plasma L. E. test has been improved by the use of dog bone marrow, in accordance with a suggestion by Sundberg,[6] and by the use of the concentrated cell layer of peripheral blood as suggested by Moffatt, Barnes and Weiss.[7] The last-mentioned technic has the advantage of simplicity and may be carried out as an office procedure, but in my experience the results have been somewhat inconsistent, although a positive test is significant.

In addition to its value in diagnosis, the plasma L. E. test has provided a useful procedure for the investigation of systemic lupus erythematosus. Through its use the factor in the blood which induces the L. E. phenomenon in the marrow or peripheral blood cells has been found to be in the gamma globulin fraction.[8] With the use of lupus erythematosus gamma globulin as an antigen, antibodies which precipitated the L. E. factor [9] have been developed in rabbits. Antibodies against normal gamma globulin failed to precipitate the L. E. factor from lupus erythematosus plasma or plasma fraction. These observations indicate an immunologic difference between the L. E. factor and normal gamma globulin.

TECHNIC OF PLASMA L. E. TEST

Bone Marrow as Indicator.—At the Cleveland Clinic heparinized dog bone marrow is supplied by the research division at weekly intervals. Under ordinary refrigeration the dog marrows remain valuable as test material for eight to 10 days. The same holds true for human bone marrow obtained on routine aspirations.

The suspected lupus erythematosus plasma, 0.5 cc., is added to 1 cc. of heparinized bone marrow in a paraffined tube. The mixture is agitated slowly for one half hour and is placed in a hematocrit tube. After centrifugation at 1,000 r. p. m. for five minutes the cellular layer is removed, smeared and stained with Wright's stain. Rosettes of clumped leukocytes and/or L. E. cells indicate a positive test. Rosettes of leukocytes alone indicate a positive test when dog marrow is used, for L. E. cells are rarely found in such preparations (figure).

Peripheral Blood as Indicator.—Concentrated peripheral blood cells may be substituted for bone marrow and the mixing carried out in a watch crystal, or one may use the method of Moffatt, Barnes, and Weiss,[7] in which equal parts of suspected lupus erythematosus blood are mixed with peripheral blood, spun down and the buffy coat examined for the L. E. phenomenon.

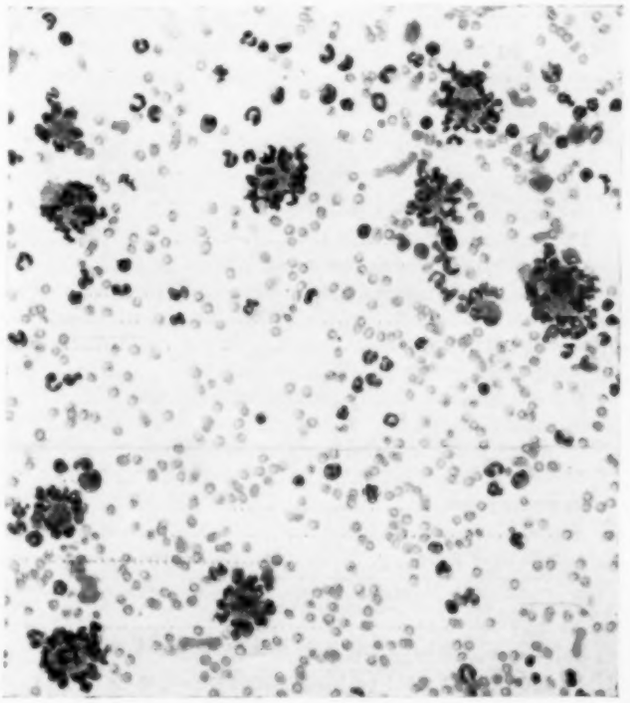
Recently [10] we have found that the method originally described by Sundberg and Lick [11] for using the patient's own peripheral blood can be improved by remixing the patient's own plasma with the cells. This procedure has the effect of bringing the L. E. factor into better contact with concentrated peripheral blood cells and has provided a more simplified and yet consistent L. E. test.

Controls are prepared from the marrow or peripheral blood cells without the addition of L. E. plasma, a comparison thus being permitted when the leukocytic clumping is in doubt.

DISEASES TESTED

Since February 1949, 1,500 preparations have been studied at the Cleveland Clinic and 122 patients have been tested. Diseases in which negative results were obtained are listed in table 1. The patients were tested because their condition showed clinical similarities to systemic lupus erythematosus or because of the presence of leukopenia, elevated gamma globulin or an increased sedimentation rate. Several preparations were made in each instance, but the results were consistently negative.

The L. E. test was positive in 27 patients, 17 of whom were admitted to the Cleveland Clinic Hospital. The plasma of one patient with systemic lupus erythematosus induced a positive plasma L. E. test in 47 consecutive bone marrow mixtures; that of another, in 46, and that of a third, in 36.



Picture in positive plasma L. E. test. Rosettes of clumped leukocytes in marrow after addition of L. E. plasma.

3. Haserick, J. R., and Sundberg, R. D.: Bone Marrow as Diagnostic Aid in Acute Disseminated Lupus Erythematosus: Report on Hargraves "L. E." Cell, J. Invest. Dermat. **11**: 209, 1948.

4. Haserick, J. R., and Bortz, D. W.: Normal Bone Marrow Inclusion Phenomena Induced by Lupus Erythematosus Plasma, J. Invest. Dermat. **13**: 47, 1949.

5. Hargraves, M. M.: Production in Vitro of L. E. Cell Phenomenon: Use of Normal Bone Marrow Elements and Blood Plasma from Patients with Acute Disseminated Lupus Erythematosus, Proc. Staff Meet., Mayo Clin. **24**: 234, 1949.

6. Sundberg, R. D.: Personal communication to the author.

7. Moffatt, T. W.; Barnes, S. S., and Weiss, R. S.: Introduction of L. E. Cell (Hargraves) in Normal Peripheral Blood, J. Invest. Dermat. **14**: 153, 1950.

8. Haserick, J. R., and Lewis, L. A.: Blood Factor in Acute Disseminated Lupus Erythematosus: I. Determination of Gamma Globulin as Specific Protein Fraction, Am. J. M. Sc. **219**: 660, 1950.

9. Haserick, J. R., and Lewis, L. A.: Blood Factor in Acute Disseminated Lupus Erythematosus: II. Induction of Specific Antibodies Against L. E. Factor, Blood **5**: 718, 1950.

10. Haserick, J. R., and Netherton, E. W.: Blood Factor in Acute Disseminated Lupus Erythematosus: III. L. E. Test with Patient's Own Peripheral Blood Cells and L. E. Factor, to be published.

11. Sundberg, R. D., and Lick, N.: "L. E." Cells in the Blood in Acute Disseminated Lupus Erythematosus, J. Invest. Dermat. **12**: 83, 1949.

CLINICAL DATA AND THE L. E. TEST

Diagnoses Before the L. E. Tests.—Seven of the 23 patients who had positive plasma L. E. tests were diagnosed as having acute or subacute disseminated lupus erythematosus before the test was performed. Of the remaining patients 11 had rheumatoid arthritis; 3, rheumatic fever; 1, acute glomerulonephritis, and 1, chronic glomerulonephritis. In almost every case of the latter group the diagnosis was regarded as unsettled and the plasma L. E. test was ordered by the clinician because systemic lupus erythematosus was a possibility.

Syphilis.—Five patients had been treated for syphilis because of positive although low titer serologic tests. Four of the five patients gave no history of primary or secondary lesions, and the spinal fluid examinations were negative. The patients had received antisyphilis treatment for one to six years before the L. E. test was performed. In each case (except the one with specific lesions) the complement fixation tests were negative and

TABLE 1.—*Conditions with Negative Plasma L. E. Test*

Condition	Number of Patients
Rheumatoid arthritis	13
Chronic discoid lupus erythematosus	7
Systemic lupus erythematosus in remission (of 8)	3
Erythema multiforme	3
Scleroderma	3
Senear-Usher syndrome	3
Multiple myeloma	3
Periarteritis nodosa	2
Cirrhosis	2
Rheumatoid fever	2
Dermatomyositis	2
Normal	2
Miscellaneous disorders (including fever of unknown origin, latent syphilis, encephalitis, Hodgkin's disease, photosensitivity)	53
Total	95

the flocculation tests (Kahn) were positive although also of low titer. It seems likely that the atypical serologic tests for syphilis in four of the five patients were false positive reactions occurring because of unrecognized systemic lupus erythematosus.

Skin Manifestations.—Seven patients had facial eruptions typical of lupus erythematosus at the time of the positive L. E. test. Sixteen evidenced no skin changes at the time of the L. E. test, although six of these patients later manifested typical dermatological pictures. One patient acquired a "butterfly" eruption during a relapse following cortisone treatment.

Mortality and Classification.—Eleven patients died subsequent to the positive L. E. test; six of these had been classified as having acute and five as having subacute cases of disseminated lupus erythematosus. Of the remainder, three patients with acute and nine with subacute cases had varying degrees of remission. The plasma L. E. test reverted to negative in three of the 12 patients who had a remission.

Convulsions.—Six of the 23 patients had convulsions of the grand mal type during the course of the illness. One 32 year old patient had been diagnosed as having had epilepsy since the age of 13 because of repeated premenstrual convulsions. Another patient, 39 years old, had had epilepsy for 15 years. Four patients had grand mal attacks during the progress of the disease. Convulsions in the terminal stages are not reported in this study.

Miscellaneous.—Fever was present in all 23 patients. In 18 the temperature had exceeded 102 F. The ages were from 17 to 62 years. The patients were all women except one. A history of ascites or pericardial or pleural effusion was noted in nine patients.

A prolonged course with relatively infrequent exacerbations was observed in eight patients. Although these persons were considered to have partial remissions they were not well but not acutely ill, still unable to pursue normal active lives. One patient presented unconvincing evidence for systemic lupus erythematosus. This patient had only occasional periods of high fever, anemia and leukopenia. The positive L. E. test and the hand eruption favored the diagnosis of systemic lupus erythematosus instead of rheumatoid arthritis. In view of the negative L. E. tests in other patients with severer and more typical rheumatoid arthritis, this patient was included with the systemic lupus erythematosus group.

Convincing proof for systemic lupus erythematosus was noted during a relapse after cortisone administration in one patient who for years had been considered an epileptic with atypical rheumatoid arthritis. The skin was free from eruption, and the main support for the diagnosis of systemic lupus erythematosus was the positive plasma L. E. test and other clinical and laboratory data. After cortisone had been given for three weeks, a pronounced clinical and laboratory response resulted. On the fourth day after treatment with the drug was stopped a distinct "butterfly" erythema appeared on the face associated with pronounced systemic symptoms including, for the first time, a temperature of 104 F. After several days the eruption disappeared and the condition returned to a state of incomplete remission. The plasma L. E. test remained positive throughout the entire period of observation.

LABORATORY DATA

The laboratory data of special interest and relation to the L. E. test are emphasized.

Sedimentation Rate.—With the method of Rourke and Ernstene the sedimentation rate was found to be elevated in all patients with systemic lupus erythematosus admitted to the Cleveland Clinic Hospital. In one patient the reading showed moderate elevation to 0.82 mm. per minute (normal, 0.45), but in all others the reading varied between 1.0 and 2.3 mm. per minute. There was no relationship between sedimentation rate and mortality; the patient with one of the lowest sedimentation rate determinations (0.82) died on the third hospital day, while the patient with the highest reading (2.3) is now without symptoms of the disease. During remissions the sedimentation rate reverted to normal before the L. E. test changed in some patients.

Renal Function.—Abnormal results of urinalysis were noted in all but one of the patients who died. Seventeen patients showed varying degrees of albuminuria.

Plasma Proteins.—Using the Longsworth modification of the Tiselius electrophoretic technic, Dr. Lena A. Lewis (of the research division) carried out separations on the plasma of 13 patients. While the gamma globulin was elevated in most cases, the alpha and beta globulin fractions often were elevated to a higher relative proportion than was the gamma globulin. The lowest gamma globulin determination was noted in the patient whose L. E. test was negative on admission.

Plasma L. E. Test.—The L. E. test was positive in all patients with systemic lupus erythematosus. Certain variations were observed according to the number of rosettes of clumped leukocytes per high power field. When human marrow was used as the indicator the number of L. E. cells was used also in rating the degree of positivity of the test. The higher the number of clumped leukocytes or L. E. cells, the more convincingly positive the test was considered.

As the condition improved, the number of cells diminished. The first change apparent in the human bone marrow preparations was absence of L. E. cells. With greater clinical improvement, the leukocytic clumping also disappeared. During remissions in three patients the L. E. test became negative. In one of these the remission followed cortisone treatment. In another patient the plasma L. E. test again became positive during a relapse.

Eight patients with chronic discoid lupus erythematosus had negative L. E. tests, as did a 15 year old boy with chronic disseminated lupus erythematosus.

In one patient with classic acute disseminated lupus erythematosus the L. E. test was negative on admission but became positive on the eighth hospital day. Because this was the only negative reaction in the group, the following details are given. The patient was at the point of death on admission. The blood urea was 231 mg. per 100 cc., and the temperature, 102.4 F. Ascites, pulmonary and ankle edema and the classic dermatological eruption of lupus erythematosus were present. Cortisone therapy was initiated, and improvement was noted in all clinical and laboratory aspects. On the eighth hospital day the plasma L. E. test was positive for the first time and the blood urea 92 mm. per 100 cc. In two weeks the urea clearance improved from 37 to 90 per cent of normal. In vitro addition of urea to a level of 303 mm. per 100 cc. in the plasma failed to inhibit the phenomenon. The Tiselius pattern revealed a low albumin and gamma globulin, a definitely high alpha globulin and fibrinogen and a normal beta globulin determination. The patient had high proteinuria. The low content of the L. E. factor observed in this plasma may be analogous to the low complement content in nephrosis, which has been shown by Seifter and Ecker [12] to be related to the loss of gamma globulin in the urine. Thus, the low gamma globulin level seems the most credible explanation for the negative L. E. test on admission.

The following case of systemic lupus erythematosus illustrated several features which deserve emphasis: insidious onset over a period of several years as benign-appearing osteoarthritis, false positive serologic tests for syphilis, grand mal convulsions, polyserositis, positive plasma L. E. test and final progression into severe, critical systemic lupus erythematosus.

REPORT OF A CASE

History.—A woman aged 41 was first seen at the Cleveland Clinic on May 2, 1947. During the preceding December, after an attack of "flu," she had noted the onset of malaise, aching of the back, arms and legs, chilliness and easy fatigability. Stiffness developed in the shoulders, elbows, knees, ankles and fingers. While worse in the morning, the condition improved with exercise. Occasional swelling of the fingers was noted. There was no accompanying fever at the onset.

Past history revealed that the patient had received injections in the hip for several months. A diagnosis of latent syphilis had been made although there had been no record of syphilitic lesions. Except for the occurrence of arthritis, in 1938, the remainder of the history was noncontributory.

Physical Examination.—The temperature was 99.2 F. The pulse rate was 104 per minute. The blood pressure was 138/86. The patient appeared well developed but obese and not acutely ill. There was no limitation in motion of the joints and no swelling. The medial side of the right knee was tender; the skin, clear. The remainder of the initial general examination revealed a normal condition.

Laboratory Data.—The routine laboratory studies taken on the first examination revealed 12 Gm. of hemoglobin per 100 cc., 4,350,000 red blood cells and 1,900 white blood cells. The sedimentation rate was increased to 1.5 mm. per minute (normal, 0.45 mm.). Blood sugar and uric acid determinations were normal. The Wassermann reaction was negative, while the Kahn reaction was 2 +. Results of a spinal fluid examination were normal. The routine urinalysis showed the specific gravity to be 1.017 and the pH, 6. The reaction for albumin was 2 +, but no cells or sugar were present.

The diagnoses were osteoarthritis and latent syphilis.

Course.—The patient continued to have stiffness and occasional swelling of the joints; general malaise, weakness and fatigue persisted. In 1949 she began to have grand mal convulsive seizures. She became progressively weaker and lost 30 pounds (14 Kg.) in weight. The illness gradually became severer, and the patient was admitted to another hospital, where pleural and pericardial effusions were found. The amount of hemoglobin dropped to 3 Gm. per 100 cc. A plasma L. E. test was positive on March 25, 1950, and repeated blood transfusions had little effect on the hemoglobin level until cortisone therapy was started. At this time the critical aspect of the condition abated and the patient entered a definite remission.

Summary.—This patient had a low grade illness of long duration, false positive tests for syphilis, grand mal convulsions and stiffness and swelling of several joints. The diagnosis of systemic lupus erythematosus was not made until the development of high fever and polyserositis. The positive plasma L. E. test confirmed the diagnosis.

COMMENT

From the clinical and laboratory data presented concerning 23 patients it is evident that a positive L. E. test is associated with systemic lupus erythematosus although the presenting signs and symptoms may be suggestive of any of the group of diseases which have been called by some the collagen diseases.

---

12. Seifter, S., and Ecker, E. E.: Complement and Isohemagglutinins in Urinary Proteins, J. Clin. Investigation **25**: 809, 1946.

The plasma L. E. test may prove of great value in providing a means for better understanding of the problem of lupus erythematosus. It may be helpful in grading the cases. The commonly accepted classification of lupus erythematosus into acute, subacute and chronic types would seem to have become meaningless when patients, ill for several years, die from "acute" or "subacute" disseminated lupus erythematosus in the same manner as do patients ill for several weeks. Even the word "disseminated," which means "scattered; distributed over a considerable area," [13] has as little significance as does the term "lupus erythematosus" itself applied to the condition in a patient with unblemished skin.

The recent use by the British of the term "malignant lupus erythematosus" has merit if its strictest definition is adhered to, but the commonly accepted connotation discourages universal acceptance of this name.

It would be difficult and undoubtedly useless to attempt to eliminate the universally accepted name of lupus erythematosus. It might be well, however, to consider other terms, such as "systemic" or "visceral," to indicate internal involvement when the L. E. test is positive. Michelson's [14] suggestion of grading the disease according to a sum total of all factors may prove extremely valuable.

The validity of the L. E. test depends, in a large measure, on the interpretation of the cases in which the diagnosis before the L. E. test was rheumatoid arthritis and the clinical course prolonged with relatively infrequent exacerbations. Patients with these signs could be considered as having either atypical rheumatoid arthritis or variations of lupus erythematosus. Since rheumatoid arthritis is considered nonfatal,[15] the fact that four patients diagnosed as having had rheumatoid arthritis for years died of lupus erythematosus lends support to the hypothesis that the L. E. test is an accurate indicator of systemic lupus erythematosus despite atypical clinical appearances.

Further support for the specificity of the L. E. test is furnished by the list of conditions given in table 1 in which the L. E. test was negative. It will be noted that the patients with multiple myeloma and cirrhosis did not have positive plasma L. E. tests in spite of abnormally high gamma globulin determinations.

The present study suggests that a patient with "atypical" rheumatoid arthritis or rheumatic fever and positive serologic tests for syphilis may have lupus erythematosus and false positive tests for syphilis. In the presence of a negative complement fixation test and a positive though low titer flocculation test the performance of the plasma L. E. test is especially valuable and may avoid unnecessary and futile treatment.

Similarly, an epileptic person with one or more of the signs of so-called collagen disease may have a positive L. E. test to account for the convulsive seizures. Premenstrual epileptiform attacks should be most assiduously studied with systemic lupus erythematosus in mind.

My experiences with the plasma L. E. test suggest to me that lupus erythematosus is a more widespread disease than has been heretofore suspected and may be the cause of many unthought-of symptoms.

The possibility exists that false positive L. E. tests may be found in the future, for the test depends on a rather unusual serologic procedure. It is possible that other diseases will produce a substance similar to the L. E. factor which will induce the L. E. phenomenon. Until further evidence appears to the contrary, however, the plasma L. E. test may be considered specific.

SUMMARY

A consideration of the significance of the plasma L. E. test in the diagnosis of systemic (acute or subacute disseminated) lupus erythematosus based on clinical and laboratory data of 23 patients results in the following conclusions:

The plasma L. E. test is a valuable diagnostic procedure in systemic lupus erythematosus.

The plasma L. E. test may correlate many seemingly unrelated conditions under the diagnosis of systemic lupus erythematosus.

The plasma L. E. test continues positive longer than any other laboratory test during remissions of lupus erythematosus.

Systemic lupus erythematosus may be misdiagnosed as epilepsy, and false positive tests for syphilis have been noted. The plasma L. E. test is especially indicated when these diseases are seen in combination with atypical rheumatoid arthritis.

A negative plasma L. E. test may occur and be due to an abnormally low gamma globulin in a patient with systemic lupus erythematosus.

The plasma L. E. test is an indicator of systemic involvement in lupus erythematosus and is not valuable in making a prognosis.

The term "systemic," when the plasma L. E. test is positive, may be preferable to "acute or subacute disseminated" in the terminology of lupus erythematosus.

13. Dorland, W. A. N.: The American Illustrated Medical Dictionary, ed. 21, Philadelphia, W. B. Saunders Company, 1947.

14. Michelson, H. E.: Personal communication to the author.

15. Cecil, R. L.: A Textbook of Medicine, ed. 7, Philadelphia, W. B. Saunders Company, 1947.

Medicine in Paris in 1828.—Paris was the Mecca of medicine during the first half of the nineteenth century, the medical supremacy of the French metropolis attracting physicians and students from all parts of the world. By 1826 there were already American students in Paris, and their number increased as time went on. The influence of the French school on the development of American medicine has been recognized and explored by Osler and others. Nowhere, however, is the impact of medical Paris on foreigners more vividly presented than in the hitherto unpublished diary kept by Peter Solomon Townsend, a New York physician, on his visit to Paris in 1828. The Paris school was then at the height of its fame and throughout the Townsend diary occur the names and personalities of the medical and surgical leaders—Broussais, Lisfranc, Desgenettes, Larrey, Dupuytren, Magendie, Villermé, and others. Wherever Townsend went, and he visited almost every hospital and educational institution in Paris, he recorded these experiences in his diary. As a result, his record contains a very detailed and vivid picture of medical conditions and establishments.—An American Doctor in Paris in 1828: Selections from the Diary of Peter Solomon Townsend, M.D., George Rosen, *Journal of the History of Medicine and Allied Sciences*, Winter, 1951.

INTRAVENOUS USE OF ALCOHOL IN THE SURGICAL PATIENT

Mary Karp, M.D.
and
J. Kenneth Sokol, M.D., Chicago

Alcohol in its various forms has played a part in medical treatment since medieval times. In the past the reports of the therapeutic application of alcohol have been so colored by empiricism, poorly controlled observations and even facetiousness that its true value has been confused and unappreciated.

The use of alcoholic fumes for anesthetic purposes is recorded as early as 1513.[1] The first mention of alcohol administered intravenously was in a Latin dissertation by Stirius in 1668.[2] In 1823 Magendie used intravenous injection of dilute alcohol containing camphor in treating cholera.[2]

In 1920 Behan reported the intravenous use of alcohol postoperatively to relieve pain and produce relaxing sleep.[3] In 1929 Marin wrote his doctoral thesis on the subject "Intravenous Anesthesia with Ethyl Alcohol."[4] The popularity of this method, however, was curtailed because users reported such complications as hemolysis and agglutination of erythrocytes, sclerosis of the blood vessels, shock and decreased urinary output. In 1939 Mueller reviewed a series of 2,000 patients in whom 5 and 10 per cent alcohol solutions were infused intravenously.[5]

For the past nine years we have been using intravenous injections of alcohol in the operative and postoperative management of the surgical patient. In May 1945 we published a preliminary evaluation based on an analysis of 150 cases.[6] Since then its use has developed until now we find it filling an important place in the postoperative care of selected patients. Dr. Vincent J. O'Conor first gave 5 to 10 per cent alcohol intravenously in his operative cases in June 1941. The value of this drug is attested by the continuation of its use in his genitourinary service since that time as a routine in practically all major operative cases. During this period at Wesley Memorial Hospital, more than 3,121 liters of 5, 7.5 and 10 per cent alcohol in isotonic sodium chloride or 5 per cent dextrose solutions with or without amino acids and vitamins has been infused into approximately 2,000 patients. It is the purpose of this paper to present our clinical observations with this useful drug.

PHYSIOLOGICAL EFFECTS

The physiological effects of alcohol have been thoroughly investigated by many scientific workers.[7] When administered parenterally, it has been found to exert sedative, hypnotic, analgesic, euphoric, vasodilator, caloric and antipyretic effects.

Alcohol belongs to the group of cerebral depressants and lessens the sensitivity to pain. It affects first the cerebrum, then the cord and, last of all, the respiratory centers, while morphine depresses the respiratory centers and cerebrum simultaneously and, to a lesser extent, the reflex excitability of the cord. Therefore, alcohol should prove more effective as a postoperative sedative than morphine.

Therapeutic doses of alcohol administered intravenously usually result in mental sedation, with dulling memory, insight and power of concentration. Thinking is fairly normal, and there is no "doped" feeling, but rather a sense of well-being and loss of anxiety. Respirations are increased. The pulse rate may increase slightly. Peripheral vasodilation occurs, causing some increase in heat loss, a slight decrease in blood temperature and occasionally a mild fall in blood pressure. Although Higgins has reported no bronchodilator or bronchoconstrictor action from alcohol given intravenously,[8] Gillespie found that infusion of a 5 per cent solution produced rest, relaxation and relief of severe dyspnea in the majority of patients in status asthmaticus.[9]

Nausea and vomiting, acidosis and headache are not concomitant with intravenous administration of alcohol; they do occur, however, when it is taken orally in comparable doses.[10] There is an increase in the flow of urine, which is due to the fluid intake, not to the diuretic effect of the alcohol alone.

Ninety to 98 per cent of the alcohol is completely oxidized as fuel for immediate energy in the normal person. Approximately 2 per cent is excreted in the urine, and 0.2 to 0.5 per cent is eliminated by the lungs. The oxidation of ethyl alcohol given intravenously is rapidly completed. Of its end products, oxygen and carbon dioxide, the latter, passing off in the lungs, acts as a respiratory stimulant.[11]

In our preliminary report[6] analyses showed 0.2 to 1.0 mg. of alcohol per cubic centimeter of blood immediately after and during the course of administration. Patients exhibited signs of inebriation when blood alcohol levels reached 0.5 to 0.7 mg. per cubic centimeter. The official United States Navy test was used in these determinations. The subjective and objective signs of increasing blood levels are concomitant with the rate of infusion, metabolic rate and individual tolerance of the patient. Ethyl alcohol given intravenously has a wide margin of safety. It is acutely fatal to man only in concentrations of about 0.5 per cent. Over 1 pound (0.5 Kg.) of unmetabolized alcohol is needed to poison

From the Departments of Anesthesiology and Urology, Wesley Memorial Hospital and Northwestern University Medical School.

Read before the Section on Urology at the Ninety-Ninth Annual Session of the American Medical Association, San Francisco, June 29, 1950.

1. Keys, T. E.: History of Surgical Anesthesia, New York, Henry Schuman, Inc., Publishers, 1945, p. 5.
2. Cited by Macht, D. I.: The History of Intravenous and Subcutaneous Administration of Drugs, J. A. M. A. **66**: 856 (March 18) 1916.
3. Behan, R. J.: Am. J. Surg. **69**: 227, 1945.
4. Cited by Adams, R. C.: Intravenous Anesthesia, New York, Paul B. Hoeber, Inc., 1944.
5. Mueller, S.: S. Clin. North America **19**: 401, 1939.
6. Moore, D. C., and Karp, M.: Surg., Gynec. & Obst. **80**: 523, 1945.
7. (*a*) Goodman, L., and Guttman, A.: The Pharmacological Basis of Therapeutics, New York, The Macmillan Company, 1941. (*b*) Mellanby, E.: Brit. M. Res. Com. Spec. Report (ser. 31) 1919, pp. 1-48.
8. Higgins, H. L.: J. Pharmacol. & Exper. Therap. **9**: 441, 1917.
9. Gillespie, J. D.: Rocky Mountain M. J. **46**: 547, 1949.
10. (*a*) Mueller.[5] (*b*) Coffey, R. R.: J. Missouri M. A. **38**: 188, 1941. (*c*) Stoe, C. S., Jr.: Clin. Virginia Mason Hosp. **20**: 58, 1941.
11. Brown, E. A.: Ann. Allergy **5**: 193, 1947.

an average adult. The toxic dose is 7.7 cc. per kilogram of body weight, while the dose for induction of analgesia and sleep varies from 1.5 to 3 cc. per kilogram of body weight. Approximately 15 cc. of 95 per cent ethyl alcohol can be administered parenterally to the average-sized adult per hour to produce analgesia and euphoria without causing the undesirable symptoms of alcohol intoxication. At this rate of administration the blood alcohol level rises slowly to approximately 0.08 Gm. per 100 cc., after which it has a tendency to level off. In the majority of patients, 40 to 60 cc. of alcohol will produce sleep lasting two to five hours.[12]

The normal person metabolizes approximately 10 cc. of pure alcohol per hour.[13] This rate is constant regardless of the concentration in the blood. If this level is exceeded, intoxication may occur. This basic fact must be kept in mind when the drug is administered. A 5 per cent alcohol solution, therefore, contains 10 cc. of 95 per cent alcohol per 200 cc. of fluid. In one hour this amount is entirely metabolized in the average person. The alcohol received by a patient in excess of 10 cc. per hour accumulates in the blood stream and is responsible for the production of analgesia, euphoria, loss of anxiety and dulling of memory, all necessary for best clinical results. Therefore, it is best to judge the rate of infusion by the subjective signs.

CLINICAL USES

Of prime importance is the sedative and analgesic quality of 5 per cent alcohol solution. We have employed it during the management of conduction anesthesia to allay discomfort of maintenance of one position for a period of time and to reduce psychic trauma of remaining alertly awake during an operative procedure. Patients who have this form of medication doze, relax, lose all apprehension and often have no memory of the surgical interlude. During the past three years the use of dilute solutions of thiopental (pentothal®) sodium (0.1 to 0.2 per cent) has supplanted administration of alcohol as a sedative during regional anesthesia because thiopental can be more easily controlled. However, alcohol is still used with gratifying results during the pinning of hips in the poor risk geriatric case.

Postoperatively, injection of the 5 per cent alcohol solution has been continued with the most gratifying results. The use of opiates or other sedatives may be eliminated entirely if the rate of administration is adjusted to the clinical response of the individual patient. Inasmuch as the sedative effects require 30 to 60 minutes to become well established, infusion of the solution should be started before the pain becomes severe. Usually the rate of flow is adjusted so that the first 200 cc. of solution is infused in 20 to 30 minutes; then the rate is slowed to 40 to 80 drops per minute, and the remaining portion of the liter of solution is injected in three to six hours. As much as 3 liters of a 5 to 7.5 per cent alcohol solution may be given in one 24 hour period. Usually 1 or 2 liters is sufficient. In a comparative study of patients who received 1 liter of 5 per cent alcohol during the first six hours postoperatively and those who had 1 liter of 5 per cent dextrose solution, we found that the patients who were given the alcohol intravenously required 33 per cent less sedation.

The value of intravenous administration of alcohol in postoperative recovery is twofold. It is not only given as a sedative and analgesic, but also as a safeguard against the possibility of atelectasis and other pulmonary complications. The respiratory rate and tidal exchange remain the same or are increased.

It appears that alcohol has a beneficial effect on the motility of the gastrointestinal tract and bladder, reducing the incidence of gas pains and colic and its associated sequelae and decreasing the need for postoperative catheterization.[14] Also, headaches are less frequent in the patients who have alcohol intravenously.

The combination of alcohol in 5 or 10 per cent concentration with 0.1 per cent procaine hydrochloride solution is reported as a potent analgesic agent.[15]

Full nutritional and caloric requirements can be easily provided from the use of a mixture of dextrose, amino acids and alcohol. Clinical observations have shown that patients feel better, experience fewer complications and sequelae and make a more rapid postoperative convalescence if they are provided adequate parenteral nutrition with such a mixture.[14]

Alcohol given intravenously has a special value in those cases in which nausea, vomiting and paralytic ileus prevail.[16] The caloric and energy requirements of a patient taking little or no food by mouth may be met for a short period by parenteral use of dextrose solution, supplemented with alcohol. One hundred cubic centimeters of 5 per cent alcohol and 5 per cent dextrose in isotonic sodium chloride solution or water yields a total of 437 calories, 267 being derived from the alcohol and 170 from dextrose. Both alcohol and dextrose increase the body's need for thiamine, riboflavin and nicotinic acid. Therefore, these vitamins may need to be administered when alcohol and dextrose solutions constitute the source of calories. Vitamins may be added to the alcohol solution without rendering the vitamins inactive.[5]

The vasodilatory effects of alcohol suggested its use in the cardiac patient.[17] Alcohol is one of the few effective coronary vasodilators and is considered by many to be the best drug for treatment of angina pectoris. In cardiacs a 10 per cent solution of alcohol may be used, thereby decreasing the actual amount of fluid intake necessary to supply the caloric requirement. Alcohol increases the loss of fluid through perspiration and reduces the danger of overloading the already embarrassed circulatory system.

Restlessness and pain have been reduced in the debilitated and morbid patient. In the cancer patient, who has previously been made comfortable with administra-

12. Behan,[5] Goodman and Guttman.[7a]
13. Mueller,[5] Higgins.[8]
14. Rice, C. O.: West. J. Surg. **57**: 238, 1949.
15. Grabill, F. J.; Hockmuth, L. N.; Thames, A. F.; Harterian, E., and Tuohy, E. B.: Bull., Georgetown Univ. Med. Center **111**: 102, 1949.
16. Mueller,[5] Footnote 10 *b* and *c*. Atwater, W. D., and Benedict, F. G.: Proc. Nat. Acad. Sc. **8**: 235, 1902.
17. Goodman and Guttman,[7a] White, P. D., and Sharber, T.: Tobacco, Alcohol and Angina Pectoris, J. A. M. A. **102**: 655 (March 3) 1934.

tion of fluids and morphine, we have greatly reduced the necessity for opiates. In the alcoholic who is approaching or has developed delirium tremens owing in part to the sudden withdrawal of his customary alcoholic intake, control with intravenous injection of alcohol has been successful when all other medications in the usual dosages have failed.

The complications from intravenous infusion of 5 or 10 per cent alcohol have been of minor importance. We have seen no after-effects, such as acidosis, headaches, vomiting and nausea. Occasionally, when the fluid has been given too rapidly, restlessness and inebriation occurred. It is singular that few patients have needed restraint. The infusion can be discontinued or slowed with return to the quiet state of well-being. Occasionally the administration has been complicated by a sclerosed blood vessel. This occurs more frequently with the 10 than with the 5 per cent solution. There was one partial ulnar nerve paralysis that may have been caused by alcohol subcutaneously in the cubital fossa. This case was reported previously,[6] and we have had no other instance of this complication. Because of this rare complication, we suggest the use of blood vessels other than those in the cubital fossa and recommend that the beginner at venipuncture use saline solution for the cannulation of the needle before alcohol solution is introduced. In numerous cases the alcohol has run subcutaneously without causing symptoms other than slight discomfort. This has been relieved by warm, moist applications.

Certain precautions in administration of this drug should be stressed. The reaction of the nervous system to alcohol is not always predictable. Therefore, patients receiving intravenous injection of alcohol should not be left alone for any length of time. Some patients may become excitable or irrational and require reassurance or restraint. Also, because his sensorium may be dulled, the patient may become less reactive to subjective and objective stimuli, such as the effect of a hot water bottle, electric pad or full bladder.

Care should be exercised in using alcohol solutions intravenously in the presence of shock or impending surgical shock because the peripheral vasodilatory effect could be deleterious in such conditions.

Patients with demonstrable liver damage or a history of epileptic attacks are not given alcohol intravenously after operation in our clinic.

SUMMARY

During the past nine years 3,121 liters of alcohol in 5, 7.5 and 10 per cent concentrations has been given intravenously to 2,000 patients.

Five and 10 per cent alcohol solutions given intravenously increase the caloric intake and have special value in patients with inanition.

Alcohol may be used intravenously in cardiac patients with relative safety because of its vasodilatory action and minimal effect on the blood pressure. It has a definite value as a sedative during regional anesthesia in combination with nitrous oxide and oxygen. It has been used with gratifying results to supplement local anesthesia for hip pinnings in the geriatric patient. With its use the need for postoperative sedation by narcotics was reduced 30 to 50 per cent in a comparative study of parallel series of patients undergoing similar surgical experiences.

We realize that any study must take into consideration the individual temperament and reactive character of each patient. However, we are so enthusiastic about the value of this procedure that we feel it should be advocated much more widely in the postoperative management of the surgical patient.

ABSTRACT OF DISCUSSION

Dr. Urban H. Eversole, Boston: It is gratifying to hear such a favorable report on such an impressive series of cases. We have used alcohol intravenously nowhere near as many times, and our use of it has largely been limited to patients who have had operations around the vertebral column and the great muscles of the back. These patients often have severe pain accompanied with muscle spasm postoperatively. Although this agent has been most helpful on several occasions in affording some relief for these patients, we cannot report as good results as have Drs. Karp and Sokol. I am sure that at least part of our inability to obtain better results is due to our failure to appreciate fully the rapidity with which alcohol is metabolized in the body. After hearing this paper, I am convinced that we expected too much too soon and did not make sufficient allowance for the amount of alcohol, over and above that metabolized by the body, that is required to produce the desired effect. We were, however, impressed on numerous occasions with the general feeling of well-being possessed by patients after the intravenous administration of alcohol. Although Drs. Karp and Sokol have tended to stress the pain-relieving properties of intravenous injection of alcohol more than its value as an energy-providing agent, it would seem that the latter action may well be of great importance, particularly in the management of many nutritional problems in both preoperative and postoperative surgical patients. In this respect, I should like to ask Dr. Karp if, with the use of alcohol alone, or of alcohol in dextrose or of alcohol, dextrose and protein, they actually saw a patient gain weight with intravenous therapy alone. I can say that I have never really seen a patient gain weight with intravenous therapy alone. Drs. Karp and Sokol state that they do not give alcohol intravenously to patients with demonstrable liver damage. Since so many patients who are in a poor nutritional state and whose caloric intake one would like to increase do have demonstrable liver damage, I would be interested to know whether they have any evidence that intravenous use of alcohol is harmful to patients with demonstrable liver damage. My own reasoning would lead me to suspect the opposite to be true. On the basis of this report and others, there is no doubt in my mind but that this adjunct in the management of certain surgical cases deserves more widespread investigation.

Dr. T. L. Schulte, San Francisco: After hearing this paper, it would seem that the intravenous use of alcohol according to the method and technique of Drs. Karp and Sokol offers a greater margin of safety and is a more useful agent than the opiates and hypnotics available at present in the field of geriatric surgery. This interesting paper is so complete in every detail that it needs no further comment.

Dr. Mary Karp, Chicago: In reference to Dr. Eversole's question regarding weight gaining with intravenous administration of alcohol, I have not seen any patient gain weight with this therapy alone. Clinically, I have not seen evidence of harmful effects from the intravenous administration of alcohol in patients with demonstrable liver damage. However, on the basis of reports found in literature it would appear preferable to refrain from its use in patients who have serious liver damage.

METHEMOGLOBINEMIA ASSOCIATED WITH PYRIDIUM® ADMINISTRATION

REPORT OF A CASE

S. E. Crawford, M.D., A. E. Moon Jr., M.D., T. C. Panos, M.D.

and

C. A. Hooks, M.D., Galveston, Texas

Methemoglobin formation with resulting anemia has received considerable attention in the recent literature. The toxic effect of such drugs as the nitrites, the sulfonamides (with the exception of sulfadiazine[8] and sulfamerazine[8]) and the aniline dyes[1] has been most commonly implicated as a causative mechanism. The aniline dyes have provided a particular hazard because they are able to penetrate the intact skin and have, therefore, been responsible for poisoning resulting from the contact with freshly marked diapers in the hospital nursery.[2] The nitrate content of well water used in the preparation of a feeding formula has been a proved cause of cyanosis and methemoglobinemia in infants, the nitrates being converted to nitrites by the action of the intestinal bacteria.[3] Other causes of methemoglobinemia include an idiopathic form with a familial incidence in which the defect seems to be inherent in the red cells.[4] An enterogenous form is reported in the literature,[5] and two cases have recently been observed showing an acquired hemolytic anemia.[6]

It is the purpose of this report to add phenylazodiamine-pyridine hydrochloride (pyridium®) to the list of drugs used clinically that are known to produce methemoglobinemia. The use of this azo dye as a urinary antiseptic has largely been supplanted by the more effective chemotherapeutic and antibiotic agents. It is now chiefly employed as a urinary analgesic and as a urine-coloring agent to facilitate certain cystoscopic procedures.

When the dye is used in massive doses in dogs, according to Walton,[6] methemoglobinemia may be produced. To our knowledge there have been no published reports of this occurring clinically.

REPORT OF CASE

W. P., a white boy, was first seen in the Diagnostic Clinic of the University of Texas in March 1947, at the age of 3 months. It was found that he had a complete bladder exstrophy, epispadias, bilateral indirect inguinal herniae and an undescended right testicle.

Surgical corrective measures were deferred because of his age until February 1949. At this time a bilateral ureterosigmoidostomy (Coffey I) was performed. The defect in the abdominal wall was repaired after removal of the exstrophic bladder. In October 1949 plastic repair of the epispadias was begun. No significant postoperative complications occurred.

An intravenous urogram in October 1949 revealed bilateral hydronephrosis of a moderate degree. Nonprotein nitrogen determinations ranged from 22 to 39 mgm. per 100 cc. The hemoglobin content was 11.3 Gm. per 100 cc. and the red cell count was 3,800,000 at the time of his discharge in March 1949.

In April 1950 the patient returned to the Children's Hospital for evaluation. He had been essentially asymptomatic during this outpatient interval. Physical examination showed some retardation in growth, with a weight of 13.2 Kg. (29 pounds), a height of 96 cm. and a head circumference of 49 cm. The remainder of his examination demonstrated only some discrete, shotty, nontender adenopathy in the cervical lymph chains, a liver palpable 2 cm. below the right costal margin and the abdominal scars of his previous surgery. The partially repaired epispadias was present.

The blood count on April 7, 1950 revealed a hemoglobin content of 10.7 Gm. per 100 cc., a red cell count of 4,360,000 and a white cell count of 10,500 with a normal differential count.

The administration of phenylazodiamine-pyridine hydrochloride in doses of 0.1 Gm. every six hours was started on April 25, 1950. On May 2, 1950 the dosage was increased to 0.1 Gm. every three hours, which is an adult dose. The patient was receiving a multiple vitamin preparation as his only other medication. The dye was given in an effort to color the urine deeply so that the ureteral ostia could be more readily identified endoscopically in the bowel and an effort made to catheterize them.

On May 5, 1950 the child was noted to have faint cyanosis of the nail beds, lips and ears. The patient was in no apparent distress, was afebrile, and examination revealed no cardiorespiratory pathology. The skin appeared quite pale. Pulse rate was 120 per minute, and the respiratory rate was 20. Complete blood count at this time showed a hemoglobin content of 7.5 Gm. per 100 cc. with 1,700,000 red blood cells; white cell total was 14,900 with a slight left shift.

The patient's venous blood, when compared with venous blood from another patient, appeared chocolate brown and did not change to red with aeration. Spectrophotometric determination by the method of Evelyn and Mallory[7] demonstrated a level of 1.12 Gm. of methemoglobin per 100 cc. to be present. The band for methemoglobin was seen at 635 millimicrons and disappeared with the addition of 5 per cent potassium cyanide solution, thus differentiating it from the sulfhemoglobin band at 620 which would remain constant.

Therapy consisted of oral administration of methylene blue in doses of 5 mg. per kilogram of body weight every four hours and a single blood transfusion of 250 cc. On May 6, 1950 a blood count showed 6.8 Gm. of hemoglobin per 100 cc., 2,150,000 red blood cells and a normal white cell total and differential count. By May 10, 1950 the hemoglobin content had risen to 11.0 Gm. per 100 cc., and the red cell count, to 3,700,000. On May 22, 1950 the methemoglobin level was 0.04 Gm. per 100 cc.

Because proof of these unusual circumstances, by reproduction of the methemoglobinemia, was required for documentation, administration of the dye was resumed in the previous dosage. Within 24 hours the methemoglobin level was 0.84 Gm. per 100 cc., and 48 hours later a value of 1.36 Gm. per

From the Departments of Pediatrics and Urology, University of Texas School of Medicine.

1. Finch, C. A.: Medical Progress: Methemoglobinemia and Sulfhemoglobinemia, New England J. Med. **239**: 470-478, 1948.

2. Graubarth, J.; Bloom, C. J.; Coleman, F. C., and Solomon, H. N.: Dye Poisoning in Nursery: Review of 17 Cases, J. A. M. A. **128**: 1155-1157 (Aug. 18) 1945. Weinberg, A. A.: Aniline Poisoning in Newborn, with Report of 13 Cases, Am. J. Obst. & Gynec. **21**: 104-108, 1931.

3. Rosenfield, A. B., and Huston, R.: Infant Methemoglobinemia in Minnesota, Bull. Univ. of Minnesota Hosp. **21**: 315-332, 1950.

4. Denny, J.; Murdock, E. T., and Rogan, J. J.: Familial Idiopathic Methemoglobinemia with Note on Treatment of 2 Cases with Ascorbic Acid, Brit. M. J. **1**: 721-723, 1943. Bancroft, H.; Gibson, Q. H.; Harrison, D. C., and McMurray, J.: Familial Idiopathic Methemoglobinemia and Its Treatment, Clin. Sc. **5**: 145-157, 1945. Sievers, R. F., and Ryon, J. B.: Congenital Idiopathic Methemoglobinemia: Favorable Response to Ascorbic Acid Therapy, Arch. Int. Med. **76**: 299-307 (Nov.-Dec.) 1945.

5. Henstell, H. H., and Dameshek, W.: Enterogenous Cyanosis with Methemoglobin and Sulfhemoglobinemia: Clinical and Spectrophotometric Studies, J. Clin. Investigation **15**: 464, 1936. Miller, R. C.: Methemoglobinemia Occurring in Case of Chronic Ulcerative Colitis, Proc. Staff Meet., Mayo Clin. **19**: 308-311, 1944.

6. Walton, R. P., and Lawson, E. H.: Pharmacology and Toxicology of Azo Dye, Phenyl-Azo-Alpha-Alpha-Diaminopyridine (Pyridium), J. Pharmacol. & Exper. Therap. **51**: 200-216, 1934.

7. Evelyn, K. A., and Malloy, H. T.: Microdetermination of Oxyhemoglobin, Methemoglobin, and Sulfhemoglobin in Single Sample of Blood, J. Biol. Chem. **126**: 655-662, 1938.

100 cc. was obtained. Cyanosis was again observed, and the administration of methylene blue was again instituted for a period of three days. In June 1950 the hemoglobin content was 10.7 Gm. per 100 cc. and the red cell count was 3,480,000.

The dye was run as a blank in the spectrophotometer, and at the wave length of 635 Å a reading could not be obtained. The addition of cyanide caused no change. It was felt that the readings obtained on the blood specimens were definitely due to methemoglobin and not to the presence of the dye itself.

CONCLUSION

A case report is presented demonstrating that in large doses phenylazodiamine-pyridine hydrochloride (pyridium®) caused methemoglobinemia in a child. This toxic effect must be considered when the drug is administered to children or others in large doses or for prolonged periods of time.

STATUS EPILEPTICUS COINCIDENT WITH USE OF PITUITARY ADRENOCORTICOTROPIC HORMONE

REPORT OF THREE CASES

Albert Dorfman, Ph.D., M.D., Nathaniel S. Apter, M.D., Katharine Smull, M.D., Delbert M. Bergenstal, Ph.D., M.D.
and
Richard B. Richter, M.D., Chicago

The therapeutic use of pituitary adrenocorticotropic hormone (ACTH) and cortisone is frequently accompanied with reactions resulting from known metabolic effects. The appearance of psychotic states and changes in the electroencephalogram during the administration of the hormone have been noted.[1] While investigating the therapeutic effects of the hormone on connective tissue diseases in children, we have observed in three of 40 patients episodes of status epilepticus lasting from five to seven hours. In these instances the spinal fluid protein was temporarily elevated, and abnormal bursts of electrical activity, as well as neurological signs, persisted long after the restoration of consciousness. The first of these patients, observed now for more than one year, has widespread brain damage. Abnormal neurological signs were present in the second patient three weeks following the convulsive episode, but mild personality changes are the only residuals. The third patient has no apparent neurological damage at present.

REPORT OF CASES

CASE 1.—D. G., a 13 year old white boy, was admitted to the University of Chicago Clinics on Feb. 10, 1950, to be treated with pituitary adrenocorticotropic hormone for dermatomyositis. His past illnesses included a poorly described series of dizzy spells at the age of 5 years. This boy had lived most of his life in an unstable social situation and showed evidence of psychiatric disturbances early in life. His present illness was reported to have started 2½ years previously, when severe pain in the legs developed. Since then his clinical course has been characterized by intermittent episodes of severe pain in the muscles and joints, recurrent fever, macular lesions of the extremities and swelling of the face. On admission, there were signs of acute illness as well as manifestations of chronic, progressive disease. There was marked muscular wasting. Atrophic changes in the skin were most apparent on the dorsum of the hands and on the abdomen. The slightest motor activity was performed with great effort and was accompanied with exquisite pain. Flexion contraction was observed at the elbows and knees. The neurological examination, limited by difficulties in motor activities, revealed only slurred speech. His temperature soon rose to 104 F Laborataory studies revealed the following data: 23,200 white cells per cubic millimeter, 83 per cent polymorphonuclear leukocytes, 10.2 Gm. of hemoglobin per 100 cc. of blood, erythrocyte sedimentation rate (Wintrobe, uncorrected) 60 mm. per hour. Results of urinalysis, the electrocardiogram and the x-ray of the chest were normal, and biopsy of the skin and muscle confirmed the clinical diagnosis of dermatomyositis.

For 12 days the patient's clinical condition remained essentially unchanged. His temperature fluctuated between 102.2 and 104 F. On February 21 he began to receive 20 mg. of pituitary adrenocorticotropic hormone intramuscularly four times a day. Twenty-four hours after administration of the drug was started, the patient started to move his head without experiencing pain. His temperature returned to normal. On February 23 the dose of the drug was decreased to 10 mg. every six hours. By March 2 the patient was up in a chair for short periods and was able to take tub baths. Thirteen days after administration of the drug was started the hemoglobin and the hematocrit readings were significantly elevated, while the white blood cell count was significantly lowered. The erythrocyte sedimentation rate was 12 mm. per hour. The patient's appetite was voracious. These improvements coincided with continued recovery of motor abilities. The dosage of the drug was reduced to 5 mg. every six hours. After a muscle biopsy on March 9, sixteen days after therapy was started, the patient was found to be confused and disoriented. The psychiatric picture was that of a toxic-delirious reaction characterized by confusion, disorientation, fearfulness, preoccupation with death and intermittent contact with reality. He was transferred to the psychiatric ward of the hospital on March 11. It was decided, in view of the seriousness of his underlying illness and a history of a previous episode of confusion, to continue the administration of the hormone in doses of 20 mg. a day.

The administration of pituitary adrenocorticotropic hormone was discontinued, however, on March 14, when the patient had three short major convulsions. Neurological examination yielded no localized findings. The spinal fluid contained 90 erythrocytes per cubic millimeter and 48.5 mg. of protein per 100 cc. but was not xanthochromic. The presence of erythrocytes was attributed to trauma during insertion of the needle. During the early morning of March 15 status epilepticus developed that was controlled only after seven hours, during which time 0.27 Gm. of phenobarbital (luminal®) sodium was given. For the next three days the patient was in deep coma. There were mild signs of a left-sided weakness. Results of chemical studies of the blood were essentially normal. On March 20 there were beginning signs of motor activity and the patient was able to take fluids by mouth. He responded to questions only by repeating over and over again the last word or last syllable of the question posed. The spinal fluid protein level on March 21 was 112 mg. per 100 cc.; there were no cellular elements. Purposeless motor activity increased, and the patient

Grace M. Clausen Johnson Fellow (Dr. Smull), and Damon Runyon Fellow in Medicine (Dr. Bergenstal).

From the Departments of Pediatrics and Medicine, the University of Chicago, and La Rabida Jackson Park Sanitarium.

This investigation was supported by grants from the Chicago Heart Association and from the National Heart Institute of the National Institutes of Health, Public Health Service.

1. Hoefer, P. A., and Glaser, G. H., in Mote, J. R.: Proceedings of the First Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1950, p. 536; J. A. M. A. **143**: 620 (June 17) 1950.

gradually regained consciousness. By March 30 he responded to questioning in a somewhat vague and bewildered fashion. Neurological examination at this time revealed profound agnosia and apraxia, interpreted to indicate diffuse cortical involvement. The spinal fluid protein four weeks and five weeks after the onset of status epilepticus was 104 and 122 milligrams per 100 cc., respectively. In neither instance was there an abnormal cell count. Subsequent psychiatric examinations revealed a severe alteration of the patient's personality function.

The principal neurological disturbances remaining one year after the acute episode were the frequent occurrence of seizures resembling psychomotor attacks and the presence of apraxia and of aphasic symptoms, of which alexia was the most prominent. He could name a folder of matches but was unable to strike the match when told to do so. Instead he fumbled in an aimless and puzzled way with the match and the folder. When asked to read the printed word "matches," he responded with his name. He could not read the number 14, and when asked what it was he said "like an abbreviation." In the last few months he has had a number of convulsive episodes preceded by impulsive destructive behavior.

Case 2.—P. M., a 6 year old white girl, was admitted to the La Rabida Sanitarium on July 15, 1950 for treatment of a recurrent attack of acute rheumatic fever. Although pale, she was well developed and well nourished and did not appear acutely ill. There was a grade III harsh systolic murmur at the apex that was transmitted towards the axilla. Her pulse was 80, and the blood pressure was 118 mm. systolic and 60 mm. diastolic. The laboratory findings on admission were as follows: 13 Gm. of hemoglobin per 100 cc., 9,000 white blood cells per cubic millimeter and a sedimentation rate of 53 mm. per hour. X-ray of the chest and urinalysis revealed no abnormalities. The electrocardiographic studies showed a P-R interval of 0.22 second. Her temperature fluctuated from 97.5 to 101.5 F. The past history provided no evidence of convulsive episodes or serious psychiatric disturbance. However, she was observed to be extremely shy and reserved. She responded to questions only in monosyllables and did not make efforts to engage her hospital mates in conversation or in play.

On the tenth hospital day, July 24, pituitary adrenocorticotropic hormone therapy was instituted. She was given 60 mg. a day during the first four days and then 40 mg. a day for the next 16 days. She received a total dose of 0.83 Gm. Three days after therapy was begun her temperature became normal and persisted at that level. During the 20 days of therapy there was no change in the character of the apical systolic murmur. However, other clinical and laboratory findings indicated that she had a remission of her rheumatic fever. The blood chemistry studies on August 7 showed the following data: pH 7.39, carbon dioxide content 30.4 milliequivalents per liter; chloride 99.3 milliequivalents; serum sodium 144 milliequivalents and serum potassium 4.45 milliequivalents.

On August 12, twenty days after the beginning of the hormone therapy, the patient appeared listless and complained of mild abdominal cramps and anorexia. The blood pressure was 140 mm. systolic and 100 mm. diastolic. The abdomen was moderately distended. At 1:20 p. m. that day status epilepticus developed which lasted for three hours despite large doses of phenobarbital. The patient then lapsed into coma for six hours. The blood pressure fell to 128 mm. systolic and 102 mm. diastolic. The spinal fluid was clear; there were three red blood cells per cubic millimeter, and the total protein content was 102.2 mg. per 100 cc. She remained semiconscious for the next day. On August 14 she had an akinetic seizure, which lasted two minutes and was not followed by confusion. At that time the blood pressure was 120 mm. systolic and 80 mm. diastolic. On the following day the serum potassium was 3.7 milliequivalents per liter. It has remained at this level. Four days after the convulsions the patient was euphoric and somewhat confused, but the neurological examination revealed no abnormalities. The euphoria disappeared in two days. During the third week (September 1), however, bilateral hyperactive deep reflexes and mild clonus of the right ankle were elicited. At that time the spinal fluid was clear and contained a total protein of 29.5 mg. per 100 cc. Only hyperactive tendon reflexes have persisted. The electroencephalographic tracings taken one month after the status epilepticus showed continuous activity of rather slow amplitude (2.6 per second to 6.0 per second activity), which was augmented during hyperventilation. The electroencephalogram taken two months later was less suggestive of convulsive diathesis.

Case 3.—J. A., a 10 year old Negro boy, was well until one month before admission, when low grade fever, epigastric pain and pains in the legs and feet developed. During the ensuing month he had episodes of chills, vomiting, chest pain, diarrhea and a constant fever. Salicylates in large doses had little effect on the temperature curve. On admission, the patient was well nourished and not in acute distress. His temperature was 102.2 F., pulse rate 138, and blood pressure 120 mm. systolic and 80 mm. diastolic. The relevant physical findings were confined to the skin where there were large round maculas arranged in streaks or annular configurations which did not blanch on pressure. The results of the laboratory studies were as follows: 13,800 white blood cells per cubic millimeter, 9.4 Gm. of hemoglobin per 100 cc., 3,740,000 red blood cells per cubic millimeter, and sedimentation rate (Wintrobe, uncorrected) 64 mm. per hour. The urine was normal. Kahn and intradermal tests with tuberculin, coccidioidin and histoplasmin elicited negative reactions. Repeated blood cultures, agglutination tests and stool cultures showed only a 1:1,160 titer for Shigella paradysenterial (Flexner's bacillus), which later dropped to 1:80. The chest x-ray showed clear lung fields and a 25 per cent enlarged cardiac shadow. The electrocardiogram was normal. A skin biopsy specimen taken shortly after admission showed lesions typical of periarteritis nodosa.

After admission to the hospital, the patient continued to have spiking temperature curves, exceeding 104 F. on some days. A wide variety of antibiotics, as well as salicylates, had no effect on the febrile course. Several days after admission, pain and discoloration of the second and third toes of the right foot developed. One month after admission the administration of the hormone in doses of 20 mg. four times a day was started. The temperature curve immediately became normal, and the patient felt subjectively much improved. After three days the dosage was decreased to 60 mg. a day and maintained at this level for 14 days. The temperature remained normal, the rash became less noticeable and the toes appeared improved. The sedimentation rate remained markedly elevated. For the next two weeks the dose was again raised to 80 mg. a day. This resulted in the return of the sedimentation rate to normal. When the dose of the drug was lowered to 40 mg. a day, the temperature curve again became abnormal, the sedimentation rate rose rapidly and the patient again felt subjectively sick. It was found necessary to maintain a dosage of 60 mg. a day for the next four weeks in order to maintain remission. During this period marked rounding of the face and acne developed. The blood pressure rose gradually to an average level of 160 mm. systolic and 110 mm. diastolic and remained at this level. There was only slight evidence of chemical abnormality during this period. For the next four weeks the dosage of the hormone was gradually decreased. During this period the patient remained afebrile and asymptomatic. The sedimentation rate continued within normal range. After the ninety-second day of therapy, while the patient was receiving 20 mg. of the hormone a day, he complained of headache. Several hours later he exhibited a peculiar stare and became irrational. This was followed rapidly by a major convulsion. Administration of the hormone was discontinued and that of phenobarbital sodium started. Several hours later status epilepticus developed, which continued for five hours before being controlled with paraldehyde intramuscularly. Lumbar puncture revealed that the spinal fluid was abnormal only with respect to a protein level of 41.5 mg. per 100 cc. Results of blood chemistry studies done several days before the convulsions and during the status epilepticus showed no marked abnormalities.

After the period of convulsions, the patient lapsed into coma, from which he gradually roused during the next several days. Three weeks after the status epilepticus he had no evidence of abnormal neurological signs. The spinal fluid protein returned to normal one week following the convulsions.

Electroencephalograms taken immediately after the episodes of status epilepticus showed changes similar to those found in

case 1. Although the patient showed no neurological abnormalities six weeks later, the electroencephalogram was markedly abnormal.

COMMENT

The appearance of psychotic reactions during the administration of pituitary adrenocorticotropic hormone and cortisone has been reported by several investigators. Soffer and his associates [2] have observed convulsive episodes in four patients with lupus erythematosus disseminatus, but they point out the high incidence of this manifestation in untreated patients with this disease. In view of the greater availability of pituitary adrenocorticotropic hormone and cortisone, it is important to assess the dangers involved in their use. The hazards of salt retention, disturbances of carbohydrate metabolism, potassium deficiency and hypertension have been dealt with extensively by various workers and have been, in general, less severe than originally anticipated.

In the three patients discussed in this report status epilepticus developed, with subsequent evidence of temporary or permanent damage to the central nervous system. The prolonged convulsive episode appeared in patients with different clinical syndromes. Status epilepticus appeared at widely varying times in the course of therapy and while relatively small doses were being used and was accompanied with elevation of spinal fluid protein. In two of the patients the convulsive episode was preceded by a toxic-delirious reaction. In none of the patients was there a serious disturbance of electrolytes as measured in the blood serum at the time of the epileptic event. Adrenal hormones may, of course, produce marked changes in the composition of the intracellular fluid which are not adequately reflected in the composition of the extracellular fluid.[3] Ransohoff and his associates [4] have recently reported the rapid reversal of psychosis and electroencephalographic changes with intravenous administration of potassium. None of our patients had received added potassium while receiving the hormone.

In view of the increasingly widespread use of these drugs in the therapy of many different diseases it seemed important to report the appearance of status epilepticus during the administration of pituitary adrenocorticotropic hormone in three of the 40 children who have been treated. Final conclusions regarding the etiological relationship between the hormone and the convulsions cannot be made at this time.

ADDENDUM

Since this manuscript was prepared for publication we have observed an isolated convulsion in a 10 year old girl who was being treated with cortisone (200 mg. a day) for disseminated lupus erythematosus. Her spinal fluid protein was normal.

2. Soffer, L. J.; Levitt, M. F., and Baehr, G.: Arch. Int. Med **86**: 558, 1950

3. Gaudino, M., and Levitt, M. F.: J. Clin. Investigation **28**: 1487, 1949.

4. Ransohoff, W., and others, read before the Second Armour ACTH Conference, Chicago, Dec. 8-9, 1950.

METHODS AND TECHNICS FOR SURGICAL CORRECTION OF STRESS INCONTINENCE

Virgil S. Counseller, M.D., Rochester, Minn.

Urinary stress incontinence in women is the same in any country and is almost always caused by bearing children. It occurs also in older women who have not borne children, but then it is usually due to a loss of muscle tone incident to the menopause and atrophy of tissue supports of the vesical neck and urethra.

It has been a universal gynecologic experience that about 75 per cent of patients suffering from a mild degree of stress incontinence will be completely cured or greatly relieved by a plastic repair of the vesical neck and urethra, alone or in combination with repair of cystocele, urethrocele and the pelvic floor. About 25 per cent have recurrence of their trouble and do require more study and more extensive surgical repair. All these operations are intended to elevate the vesical neck and urethra and to elongate the urethra somewhat.

It has been shown by the careful investigations of Millin and Read,[1] Ingelman-Sundberg,[2] Muellner,[3] Marshall [4] and Marshall, Marchetti and Krantz [5] that in stress incontinence, there are usually varying degrees of pathologic ptosis of the bladder. The severer the ptosis, the greater will be the incontinence. Ingelman-Sundberg [6] has expressed the belief that the incontinence is due to a relaxation of the pelvic floor, which allows the bladder to come down into micturition position with abnormal ease. This leads to a decompensation of the internal urethral sphincter. There is a normal displacement of slight degree of the bladder downward and backward which is regarded as micturition mobility. Whatever overexaggerates this position by relaxation of the pelvic floor, or any trauma that produces fixation of the urethra or vesical neck to such a degree as will hold open the internal urethral orifice will result in incontinence. There are a few patients, however, that have some incontinence with extremely little ptosis. These are principally older patients, and their incontinence is often considered as neurogenic or just atrophic or degenerative in character.

From the Division of Surgery, Mayo Clinic.

Read before the Section on Obstetrics and Gynecology at the Ninety-Ninth Annual Session of the American Medical Association, San Francisco, June 28, 1950.

1. (*a*) Millin, T., and Read, C. D.: Stress Incontinence of Urine in the Female, Post Grad. M. J. **24**: 3 (Jan., pt. 1) 1948. (*b*) Millin, T., and Read, C. D.: Stress Incontinence of Urine in the Female: Millin's Sling Operation, Post Grad. M. J. **24**: 51 (Feb., pt. 2) 1948.

2. Ingelman-Sundberg, A.: The Pubovesical Ligament in Stress Incontinence, Acta obst. et gynec. Scandinav. **28**:(fasc. 3-4): 185, 1948-1949.

3. Muellner, S. R.: The Etiology of Stress Incontinence, Surg., Gynec. & Obst. **88**: 237 (Feb.) 1949.

4. Marshall, C. McI.: Relief of Severe Stress Incontinence: Technique and Anatomy of Two Suprapubic Fascial Operations, J. Obst. & Gynaec. Brit. Emp. **55**: 126 (April) 1948.

5. Marshall, V. F.; Marchetti, A. A., and Krantz, K. E.: The Correction of Stress Incontinence by Simple Vesicourethral Suspension, Surg., Gynec. & Obst. **88**: 509 (April) 1949.

6. Ingelman-Sundberg, A.: Operationsteknik vid urininkontinens, Nord. med. **32**: 2297 (Oct. 4) 1946.

Our records of the past five years show that many of the patients who have been surgically treated for incontinence have had other associated pelvic conditions which also required surgical treatment. These conditions are cystocele, urethrocele, prolapse of the uterus, prolapse of a retained cervical stump, menometrorrhagia, small fibroids and recurring uterine polyps. In some cases the incontinence was the patients' primary concern, but in a large percentage the incontinence was incidental to other pelvic trouble. Usually they fail to mention it in their complaint unless specifically questioned concerning it. This is explained by the fact that the patients have had the incontinence, or "weakness of the bladder" as they call it, for so many years that they are accustomed to it and usually are surprised to learn that something may be done for it.

It has become important then to inquire about the urinary control of every patient who is to have vaginal plastic surgery, because if during the necessary pelvic surgery some attention is not given to elevation of the urethra and vesical neck, not only will the patient continue to have her incontinence but it may be made considerably worse. This is particularly true in many patients with prolapse and large cystoceles.

This study and the conclusions are based on 578 patients surgically treated for urinary stress incontinence which was part of, the whole of or their major pelvic complaint. The operations were performed during the past five years at the Mayo Clinic.

SELECTION OF PATIENTS

When there are associated pelvic conditions which require surgical treatment, there can hardly be any selection of patients, providing the patient presents a satisfactory surgical risk. Advanced age, crippling arthritis and severe cardiac disease almost always are sufficient reasons for rejection of a patient for surgical correction of incontinence or prolapse and cystocele. In the cases in which pelvic repair is applicable, corrective measures should be done for the incontinence.

Patients who have little, if any, cystocele and those with a congenitally short anterior vaginal wall are not favorable for any plastic procedure on the urethra or vesical neck for the incontinence. Those who have begun to have atrophic contractions of the vaginal walls probably should be excluded from the favorable group for vaginal approach to the incontinence problem. Extensive scarring from previous vaginal operations usually but not always contraindicates any further vaginal procedures. The incontinence in most of these patients is due to fixation of the urethra and vesical neck in scar tissue. The sphincteric mechanism is unable to contract or relax. This type of incontinence has not infrequently been completely cured or greatly relieved when the anterior vaginal wall is opened, the urethra and vesical neck then being separated from the vagina and the posterior surface of the pubis. These structures are elevated by an iodoform gauze pack placed around the urethra and under the vesical neck. The pack is left in position eight to 10 days and then replaced with a second pack with the patient under intravenous anesthesia. This pack is left another five to seven days until the bladder remains elevated by itself and does not get reattached to the vagina or pubic bone. The vesical sphincter, if not seriously damaged by scar tissue, will begin to function normally again in some instances. This is a simple operative procedure and should be considered before one ventures into more major suprapubic operations.

The more experience one has with this problem, the more aware one becomes of the desirability of some method of helping the group of patients whose complaint is incontinence and who actually are not in much need of any pelvic repair. It has never seemed the right method of approach to submit these patients to major attempts to elevate the urethra and vesical neck surgically, unless the incontinence was induced or made worse by a previous surgical procedure on the bladder or uterus.

A point of considerable importance in the etiology and as an aid in the decision of how to treat the patient, it seems to me, is the slow onset of this condition over a period of years, rather than an abrupt onset. The majority are traceable to a difficult or prolonged obstetric delivery, which has to be interpreted as a tear or stretch of whatever fascial or muscular structure maintains the urethra and sphincteric mechanism in its normal position.

The object of suprapubic operations is to elevate the urethra and vesical neck by means of some type of fascial sling, and of these operations there are many. Among these should be listed the operations of Aldridge,[7] Miller,[8] Millin and Read,[1b] Goebell [9] and Stoeckel.[10] Some are combined with a vaginal plastic repair of the sphincteric mechanism and urethra, such as the useful Kelly [11] operation or the more extensive Kennedy [12] technic. The fascial strips may be taken in different ways from the recti and oblique fasciae and sutured beneath the urethra or else brought around the urethra just in front of the vesical neck, the fascial ends then being reattached over the recti muscles.

To obtain these fascial strips is not so simple as it appears from artists' drawings, and I should like to point out some of the difficulties that may be encountered: (1) If the patient has had a low abdominal vertical incision previously, the recti fascia will, of course, consist of part scar tissue, and this scar tissue will tear more easily than the unscarred fascia and will not give the support one desires. If the fascia has been incised transversely, this fascial defect becomes serious because it may tear loose from its attachment near the symphysis. (2) Fascial strips which are obtained by transverse incisions may be too short for satisfactory support of the vesical neck unless these strips are taken in a curved fashion extending upward and outward to include the external oblique fascia. Some patients who require such extensive operations for their incontinence are obese, and the oblique fascia in them is thin and not too useful for the support of the vesical neck that is required to

7. Aldridge, A. H.: Transplantation of Fascia for Relief of Urinary Stress Incontinence, Am. J. Obst. & Gynec. **44**: 398 (Sept.) 1942.

8. Miller, N. F.: The Surgical Treatment of Urinary Incontinence in the Female, J. A. M. A. **98**: 628 (Feb. 20) 1932.

9. Goebell, R.: Zur operativen Beseitigung der angeborenen Incontinentia vesicae, Ztschr. f. gynäk. Urol. **2**: 187, 1910.

10. Stoeckel, W.: Über die Verwendung der Musculi pyramidales bei der operativen Behandlung der Incontinentia Urinae, Zentralbl. f. Gynak. **41**: 11 (Jan. 6) 1917.

11. Kelly, H. A.: Gynecology, New York, D. Appleton and Company, 1928: Bladder and Urethra, chap. 40, pp. 804-872.

12. Kennedy, W. T.: Urinary Incontinence Relieved by Restoration and Maintenance of Normal Position of Urethra, Am. J. Obst. & Gynec. **41**: 16 (Jan.) 1941.

correct the incontinence. If the incontinence has come on in later years in patients who have not had children, then one must consider the loss of the supporting structures as due to atrophy if it is not a result of some degenerative disease of the central nervous system.

It is certainly likeliest that some form of muscle training or reeducation, as suggested and practiced by Kegel,[13] could have considerable application and benefit in this group of cases. Furthermore, if it was used earlier in those patients who have had difficult deliveries, one might prevent the later onset of the incontinence entirely. In recent months my colleagues and I have used Kegel's technic in some cases in which other pelvic operations were not required and in those in which other pelvic operations, although indicated, were for one reason or another undesirable. The results have been sufficiently encouraging for continuation of its use.

SURGICAL PROCEDURES AND RESULTS

During the past five years the only surgical procedures for incontinence which my colleagues and I have used have been the Kelly operation, the modified Kelly and the Kennedy operation, except that four patients were treated by the Millin operation. Until the past year we have regarded the more extensive fascial sling operations as unnecessary, but the investigations of Marshall, Marchetti and Krantz [5] and of Millin and Read [1] have altered our thinking somewhat so that we are resorting to their procedures or some modification of them oftener, especially if the patients have had one or more plastic operations on the vesical neck for incontinence.

TABLE 1.—*Kelly Operation for Incontinence*

Result	Cases	Percentage
Poor	23	10
Some improvement	12	5
Continent on dismissal or on later report	192	85

The Kelly [11] operation is a simple procedure and can be easily performed alone or in combination with vaginal plastic operations. Its simplicity is a distinct advantage and no doubt is the reason it is most frequently used in preference to other procedures. This operation as described by Kelly [11] consists of insertion of one or two mattress sutures so placed that they will tighten the muscle layer in the vesical neck and posterior third of the urethra. If the incontinence is more than moderate, most gynecologists do a little more suturing than that described by Kelly and often speak of it as a modified Kelly operation.

The regular Kelly operation (table 1) was used on 227 patients for varying degrees of incontinence, but only 10 of these had incontinence of more than grade 2 on a basis of 1 to 4. Twenty-three patients (10 per cent) had a poor result; 85 per cent were completely relieved at the time of dismissal or were reported by letter six months or more later to be cured of their incontinence and to be voiding normally; 5 per cent were improved only. Repair of cystocele was performed in 66 per cent, and a vaginal hysterectomy or removal of a cervical stump was done in 48 per cent of the patients.

A Kelly operation (table 2) was done as a secondary operation for incontinence on 21 patients who had undergone some previous similar operation. In this group, the poor results were somewhat higher, being 14 per cent, but the good results were 76 per cent, and 10 per cent reported improvement only.

A modified Kelly operation (table 3) was performed on 110 patients. The poor results here involved only six patients (6 per cent), and the good results at the time of dismissal or report six months later were 87 per cent.

TABLE 2.—*Kelly Operation as a Secondary Procedure*

Result	Cases	Percentage
Poor	3	14
Some improvement	2	10
Continent on dismissal or on later report	16	76

TABLE 3.—*Modified Kelly Operation for Incontinence*

Result	Cases	Percentage
Poor	6	6
Some improvement	8	7
Continent on dismissal or on later report	96	87

There were only eight patients (7 per cent) who were improved only. In this group 78 per cent had cystocele operations, and in 54 per cent a vaginal hysterectomy was also done.

The Kennedy operation is also a plastic operation on the vesical neck and urethra which is performed through the vaginal approach and is a more extensive operation than either a Kelly or modified Kelly procedure. In 1942 I [14] reported on 26 of these operations, which were performed in conjunction with vaginal hysterectomy in almost all instances. The results were excellent. During the five year period covered by the present report, this method of repair has been used more frequently and less selectively than before. It was performed in 179 patients (table 4). There were 7 per cent poor results; that is, the patients were no different than they were before operation. However, 85 per cent were cured at the time of dismissal or reported six months or more later that they were completely relieved of their incontinence. Only 8 per cent were reported as improved. Here also, cystoceles were repaired in 80 per cent, and vaginal hysterectomy was performed in 59 per cent.

TABLE 4.—*Kennedy Operation for Incontinence*

Result	Cases	Percentage
Poor	12	7
Some improvement	14	8
Continent on dismissal or on later report	153	85

TABLE 5.—*Kennedy Operation as a Secondary Procedure*

Result	Cases	Percentage
Poor	8	30
Some improvement	6	22
Continent on dismissal or on later report	13	48

The Kennedy operation (table 5) was also done on 27 patients who had previously undergone some type of plastic operation for their incontinence, the results of which had been poor. The poor results for this technic were 30 per cent, and the good results as reported at

13. Kegel, A. H.: Progressive Resistance Exercise in the Functional Restoration of the Perineal Muscles, Am. J. Obst. & Gynec. **56**: 238 (Aug.) 1948.

14. Counseller, V. S.: Urinary Incontinence in Women, Am. J. Obst. & Gynec. **45**: 479 (March) 1943.

dismissal or after six months were only 48 per cent. Those improved were 22 per cent.

When one combines the results of the primary Kelly, Kennedy and modified Kelly operations (table 6), there were 8 per cent poor results, 86 per cent good results and 6 per cent with improvement.

The combined results of these same operations which were performed for incontinence after some previous type of plastic operation had given poor results (table 7) show that there were 22 per cent poor results and 57 per cent good results, while 21 per cent reported improvement.

There were four patients on whom the Millin fascial sling operation was performed. All these were totally incontinent before operation. Three were completely cured, and in one patient the result was poor. In this case the patient was continent for two weeks postoperatively until the fascia broke and the incontinence immediately returned.

When one reviews an extensive group of patients who have been surgically treated for urinary stress incontinence by the Kelly or Kennedy operations, which in substance combine most features of any or all plastic procedures for this condition, it becomes apparent that considerable thought to the selection of types of operations must be applied. This is especially true if the patients have had one or more previous surgical attempts for correction of the incontinence that have given poor results.

TABLE 6.—*Combined Results of Primary Operations*

Result	Kelly	Kennedy	Modified Kelly	No. of Cases	Percentage
Poor	23	12	6	41	8
Some improvement	12	14	8	34	6
Continent	192	153	96	441	86
	227	179	110	516	100

TABLE 7.—*Combined Results of Secondary Operations*

Result	Kelly	Kennedy	Modified Kelly	No. of Cases	Percentage
Poor	3	8	2	13	22
Some improvement	2	6	4	12	21
Continent	16	13	4	33	57
	21	27	10	58	100

The best analysis actually is comparison of the poor results of the primary Kelly, modified Kelly and the primary Kennedy operations with the Kennedy and the Kelly surgical procedures which are used in secondary operations. The routine primary Kelly operation has in this series poor results in 10 per cent, but if one adds to this those cases which show improvement, so classified because there is still some incontinence, unsatisfactory results total 15 per cent. The modified Kelly operation, which is somewhat more extensive, resulted poorly in only 6 per cent, or in 13 per cent if the group of cases are added that are listed as improved.

The Kennedy operation gives about the same results as the modified Kelly operation, principally because there is little difference in the technic between the two procedures. The poor results in the primary Kennedy operation are 1 per cent higher than in the primary modified Kelly operation, being 7 per cent. When the improved group is added, unsatisfactory results for the primary Kennedy operation occur in 15 per cent.

However, when one compares the results of these two methods when applied as secondary operations, considerable difference in results is immediately apparent, which I believe should be interpreted as meaning that the Kennedy operation has been used, in this group at least, in patients who have had more scarring and fixation of the vesical neck and should have been treated surgically by one of the more extensive suprapubic operations of fascial sling or Marshall suspension of the urethra and vesical neck. This is our plan now, and I am sure it will be in the future. The poor results for the Kelly operation when used as a secondary operation amount to 14 per cent, while those for the Kennedy operation when used after multiple operations amount to 30 per cent. The explanation for the low figure for the Kelly operation in the secondary operations is, I am sure, that the anatomy of the vesical neck appears more favorable for further simpler methods of repair.

In view of the high incidence of poor results in secondary operations for urinary stress incontinence, it would seem that suprapubic operations would be indicated oftener than they have been done in this series. Although there were only four patients who were treated for total urinary stress incontinence by the suprapubic approach, three were completely cured, and in the fourth the results were poor only after the fascia broke during the patient's convalescence.

CONCLUSIONS

Many patients who have urinary stress incontinence also have definite indications for surgical repair of cystocele and urethrocele, for vaginal hysterectomy, vaginal removal of the cervical stump or for other procedures for prolapse.

Vaginal plastic operations such as the Kelly, modified Kelly and Kennedy operations will give cures in approximately 85 per cent of the cases of incontinence. The selection of the surgical procedure should depend on the severity of incontinence.

When these vaginal plastic operations are used in cases in which multiple previous operations have been done for incontinence, the unsatisfactory results will be nearly 50 per cent as shown in our combined results.

A more careful selection of patients with recurring urinary stress incontinence must be done, and the patients should be treated perhaps by more extensive suprapubic operations if poor results are to be avoided.

Santiago Ramón y Cajal.—In 1899 Cajal was invited to give a series of three lectures on his work at the decennial celebration of Clark University. . . . He embarked for the United States accompanied by his wife. Garrison states that Cajal was a handsome figure, with the abstracted mien of a laboratory worker and that he was agreeably impressed by the American people. He was somewhat awed by the fast pace of life and considered a Spanish bullfight tame compared to the frenzy of the American populace during the Independence Day celebrations. —Robert Arthur James Haggar, M.D., The Life of Santiago Ramón y Cajal, *University of Western Ontario Medical Journal*, January 1951.

PITUITARY ADRENOCORTICOTROPIC HORMONE IN SEVERELY BURNED CHILDREN

Forrest H. Adams, M.D., Eldon Berglund, M.D., Samuel G. Balkin, M.D.
and
Tague Chisholm, M.D., Minneapolis

Any physician who is called on to treat a child who has just been severely burned finds that he has a number of difficult therapeutic problems before him. Initially, he must care for the burned area or areas. Following this, during the first few hours and sometimes up to several days, the problem of shock arises and, along with it, the rapid changes of intravascular physiology, as indicated by the changing hematocrit and plasma volume. An excellent monograph on the therapy of these and other problems in burned persons has been published by Harkins.[1] If the child survives these crucial days, the physician is then frequently confronted with the following problems: (1) marked pyrexia, (2) marked anorexia leading to weight loss and malnutrition, (3) marked irritability and emotional instability and (4) loss of body proteins from the burned areas.

The first three problems are related to each other and probably are synergistic in their effect on each other. The high fever of the patient undoubtedly interferes with the desire to eat food, which is so essential to maintain the proper nutritional state for skin grafting. The marked irritability so frequently observed is probably also related to the fever; this usually makes the nursing care quite difficult. The loss of body fluids and proteins from the burned areas potentiates a state of malnutrition, thus making skin grafting more difficult.

During a study made by us in which we were administering pituitary adrenocorticotropic hormone (ACTH) to patients with acute rheumatic fever,[2] we were impressed with the marked antipyretic effect of the hormone, the increase in appetite produced during its administration (frequently up to 3,000 calories per day) and the beneficial change in temperament created. These observations, in addition to those of Seifter,[3] in which he showed that pituitary adrenocorticotropic hormone decreased the membrane permeability of joint surfaces, led us to consider administering the hormone to severely burned children. We have given the hormone to two patients for periods of four and fifteen weeks respectively and to one patient for five days.

CASE 1.—The first patient to receive pituitary adrenocorticotropic hormone therapy was a 7 year old girl who was severely burned on April 6, 1950 over her buttocks and lower extremities, as seen in figure 1. She had been febrile for four weeks, was extremely irritable and refused to eat. In order to maintain her caloric intake, she had to be fed through a gavage tube which she resisted strenuously. Numerous transfusions and intravenous fluid administrations were required. For two days during the fourth week of her illness she was given 20 mg. of pituitary adrenocorticotropic hormone; for the next three days 20 mg. of the hormone was administered every eight hours. Almost immediately her disposition changed to one of cooperativeness and pleasantness. As can be seen in figure 2, her temperature quickly dropped to normal and stayed there until the hormone was withheld, when it again became elevated. Concomitant with the administration of the hormone, she began to take food and fluids by mouth so that gavage and intravenous feedings could be stopped. One day after the substance was discontinued, she received her first skin grafts. Observation of the burned areas revealed no unusual changes attributable to the administration of the pituitary adrenocorticotropic hormone, and these grafts took well.

The result in this patient encouraged us to try the hormone again but over a longer period of time. This was done in two patients whose case histories follow.

CASE 2.—The second child to receive pituitary adrenocorticotropic hormone was a 4 year old white boy who received severe burns when trapped in a burning house July 17, 1950. There were third degree burns of the posterior aspect of the arms, legs, trunk and buttocks and a portion of the face and neck, involving an estimated 50 per cent of the body surface as seen in figure 3. Plasma was administered and pressure

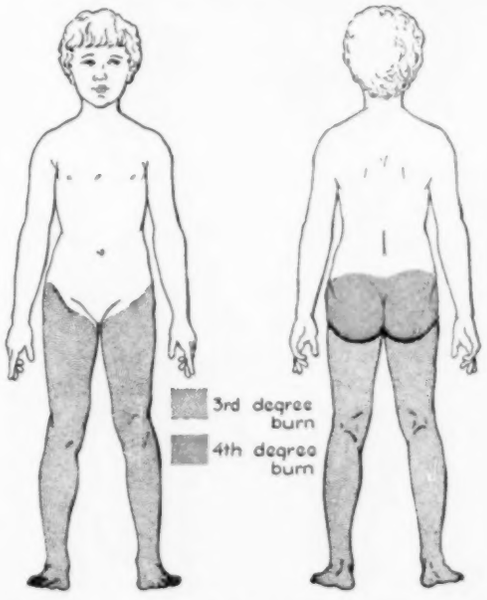


Fig. 1.—Patient C. W., a 7 year old girl who received severe third degree burns over the entire lower extremities and buttocks.

dressings were applied to the burned areas. Large amounts of plasma sustained the patient during the first 24 hours during which time his axillary temperature rose to 106 F. He remained semicomatose and irrational for the first three days. The daily oral fluid intake varied from 200 to 500 cc. during the first four days, and parenteral fluids had to be given to meet his requirements. Administration of pituitary adrenocorticotropic hormone, 10 mg. every six hours, was started on the fifth hospital day. The temperature promptly dropped from 103 to 101 F., at which level it remained for the next three days. By the eighth hospital day, at which time he received 60 mg. of the hormone, the child's oral fluid intake had increased

From the Departments of Pediatrics and Surgery, University of Minnesota Medical School and the Minneapolis General Hospital.

1. Harkins, H. W.: Treatment of Burns, Springfield, Ill., Charles C Thomas, Publisher, 1942.

2. Adams, F. H.; Kelley, V. C.; Dwan, P. F., and Glick, D.: Response of the Serum Hyaluronidase Inhibitor and Mucoproteins to Adrenocorticotropic Hormone in Rheumatic States, Pediatrics, to be published.

3. Seifter, J.; Baeder, D. H., and Begany, A. J.: Influence of Hyaluronidase and Steroids on Permeability of Synovial Membrane, Proc. Soc. Exper. Biol. & Med. 72: 277, 1949.

to 1,700 cc. and his food intake to 2,525 calories. Use of the hormone was discontinued on the ninth hospital day. The temperature promptly rose to 103.4 F. and the fluid and food intake dropped sharply. While the hormone was being administered the child remained fairly comfortable, oriented and cooperative. With its discontinuance and coincident with the elevation of temperature he again became disoriented, very restless, perspired heavily and appeared critically ill. Pituitary adrenocorticotropic hormone administration was started again on the twelfth hospital day, and again the patient's temperature promptly dropped to near normal levels, his oral fluid and food intake increased and he became comfortable and cooperative. His temperature and caloric intake are illustrated in figure 4. At the time the dressings were first changed, 10 days after admission to the hospital, the burns appeared dirty and not ready for grafting. No frank infection was noted. Considerable necrotic tissue was still present by the twenty-third hospital day. By the thirty-eighth day the burns were clean and granulating. The first skin grafting was done on the forty-third hospital day, at which time autografts from the patient's

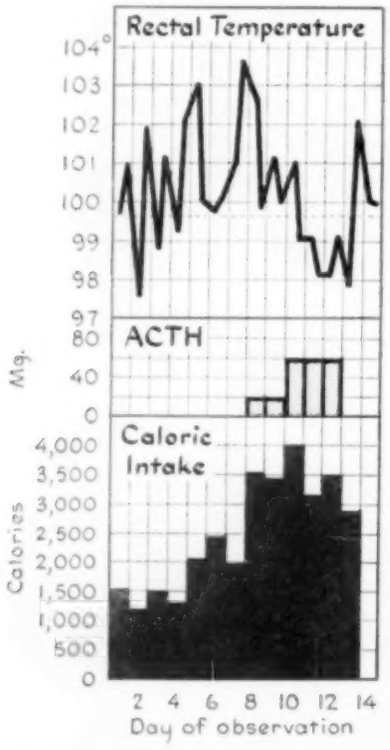


Fig. 2.—Persistence of fever in patient C. W. one month after being burned. Note effect of pituitary adrenocorticotropic hormone on the fever and caloric intake. Before the hormone was given, the caloric intake had been maintained by gavage feedings.

abdomen were placed on his right forearm and hand, and a homograft obtained from his mother was placed on his right upper arm. Further grafting was done on the fifty-third and the sixty-sixth hospital days. Although pituitary adrenocorticotropic hormone was administered during most of this time there was no apparent interference with the take and healing of the grafts. The dosage of the hormone was 40 mg. per day from the twelfth through the twenty-first day, 20 mg. per day from the twenty-second through the thirtieth day with three exceptions and none from the thirty-first through the forty-second day. Administration of the hormone was resumed on the forty-third day and carried on until final discontinuance on the hundredth day. The caloric intake gradually decreased from the high early levels of 2,800 calories to an average of 1,400 calories per day during the remainder of the time he received the hormone. A typical moon facies developed due to adrenal stimulation after about three weeks of therapy, but no other complications were noted. Aureomycin was given prophylactically for about three months, and the child received numerous blood transfusions. The homologous skin graft did not slough as would be expected but rather was replaced gradually by the patient's own skin invading from the side.

Case 3.—The third child to receive pituitary adrenocorticotropic hormone was an 11 year old boy who sustained third degree burns to almost the entire trunk and both arms as seen

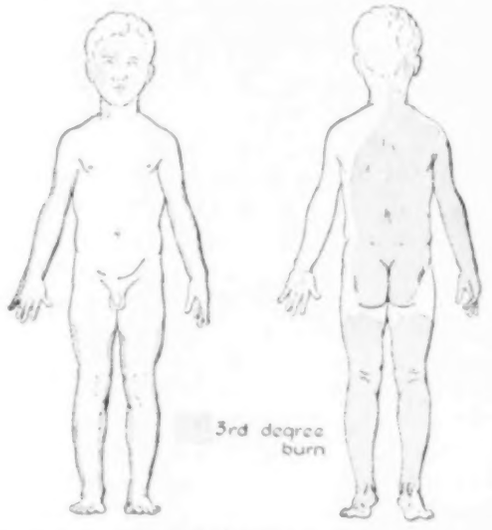


Fig. 3.—Patient T. S., a 4 year old boy who received third degree burns on the posterior aspect of the arms, legs, trunk and buttocks and a portion of the face and neck involving an estimated 50 per cent of the body surface.

in figure 5. He was not as acutely or seriously ill as the preceding patient. The hormone was administered for the purpose of observing its effect on the caloric intake and on the take of the skin grafts. Figure 6 illustrates the effect of the hormone on the temperature and caloric intake. Skin grafting was done on the twenty-seventh, thirty-ninth, fiftieth and sixty-eighth days after the patient was burned. An estimated 60 per cent take occurred with the first graft and a 75 per cent take with the second graft. A pyocyaneous infection developed in the interval between the third and fourth grafts but cleared readily with acetic acid irrigations. Pituitary adrenocorticotropic hormone administration, 10 mg. every six hours, was started on the sixteenth day and continued through the twenty-third day. The dose was reduced to 10 mg. every

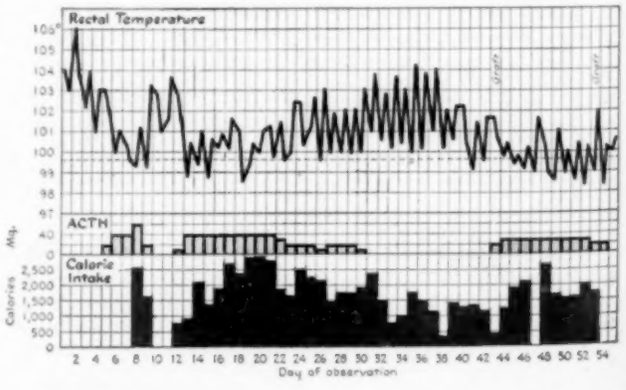


Fig. 4.—Effect of pituitary adrenocorticotropic hormone on the fever and caloric intake of patient T. S.

eight hours for the next ten days, then to 10 mg. per day for the next four days. Following skin grafting on the thirty-ninth day the hormone was discontinued for two days but then started again and continued until the patient had received hormone therapy for a total of thirty days. The skin grafting results were considered to be entirely satisfactory. Aside from slight rounding of the face no deleterious effects from the use of the hormone were noted. Additional therapy consisted of

parenteral fluids in the first week of his illness and blood transfusions at intervals as indicated by hemoglobin determinations. Aureomycin was also given prophylactically.

COMMENT

There are several theoretical objections to the use of pituitary adrenocorticotropic hormone in patients who have been burned. 1. Some investigators have reported that it interferes with wound healing.[4] Others, however, have found no marked instances of interference with wound healing.[5] We have found no reports on its effect on the healing of burns. 2. The hormone has been reported to decrease the nitrogen balance.[6] This could theoretically interfere with the nutrition of a severely burned patient. However, since such a patient usually does not consume even the minimal amounts of food necessary for proper nutrition, he is already in negative nitrogen balance. The increased caloric intake accompanying the use of the hormone might reverse the negative nitrogen balance. 3. Theoretically the pituitary and adrenal glands are in a condition of stress caused by the burn, and further stimulation by the hormone could not be expected to produce beneficial effects. It is conceivable, however, that the adrenal response is not maximal and that further adrenal stimulation might be crucial in helping the patient over a critical period.

Since pituitary adrenocorticotropic hormone is known to have the effect of decreasing the membrane permeability of joint surfaces,[3] the mechanism involved might be of value in treating the severely burned child. Accordingly the hormone might be expected to decrease

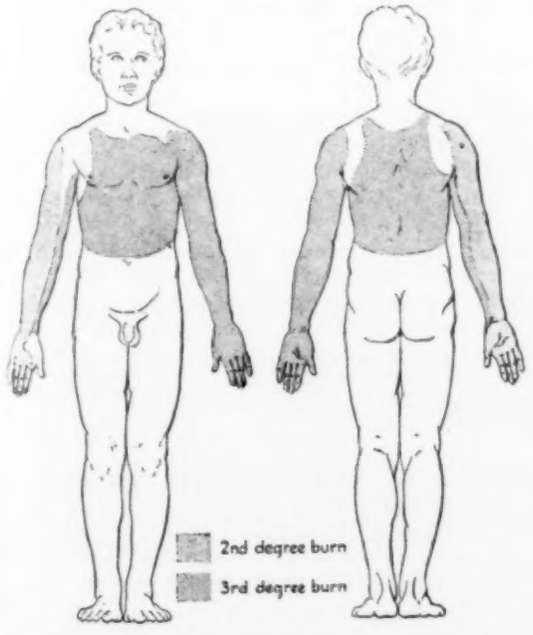


Fig. 5.—Patient M. M., an 11 year old boy, who sustained third degree burns to almost the entire trunk and both arms.

the rapid changes of hematocrit and plasma volumes during the acute phase of the disease and decrease the loss of fluids from the burned areas following the acute phase by altering the permeability of the vascular membranes.

SUMMARY

Administration of pituitary adrenocorticotropic hormone (ACTH) to severely burned patients is a rational form of treatment, justifying further investigation. The hormone has been given to three patients who had severe burns of the body. One of the patients received

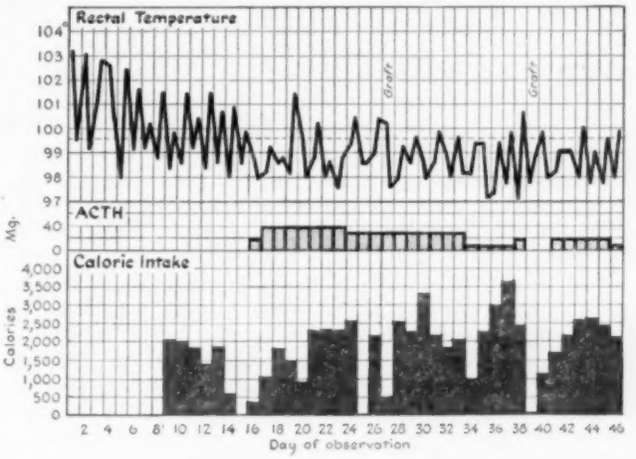


Fig. 6.—Effect of pituitary adrenocorticotropic hormone on the fever in patient M. M. The caloric intake was good before the hormone was started.

the hormone for five days and two received the hormone for 30 and 100 days respectively. Administration of the substance produced a decrease in the fever, an increase in the caloric intake and an improvement in the emotional status of the patients. Its administration to the three patients did not interfere with wound healing or the take of the skin grafts.

4. Creditor, M.; Bevans, M.; Mundy, W., and Ragan, C.: Effect of ACTH on Wound Healing in Humans, Proc. Soc. Exper. Biol. & Med. **74**: 245, 1950. Howes, E. L.; Plotz, C. M.; Blunt, J. W., and Ragan, C.: Retardation of Wound Healing by Cortisone, Surgery **28**: 177, 1950.

5. Slocumb, C. H.; Polley, H. F.; Hench, P. S., and Kendall, E. C.: Effect of Cortisone and ACTH on Patients with Rheumatoid Arthritis, Proc. Staff Meet., Mayo Clin. **25**: 476, 1950. Cole, J. W.; Orbison, J. L.; Holden, W. D.; Hancock, T.; Lindsay, J. L.; Ankeney, J. L., and Hubay, C. A.: A Histological Study of Wound Healing and Its Relationship to Cortisone and Serum Antihyaluronidase, read before the Clinical Congress, American College of Surgeons, Boston, Oct. 23-27, 1950.

6. Mote, J. R.: Proceedings of the First Clinical ACTH Conference, Philadelphia, The Blakiston Company, 1950.

Continuous Medical Education.—The medical schools certainly cannot be all things to all people and I believe we are fooling ourselves if we think that the conventional four-year curriculum will result in a "compleat" physician. It is my opinion that we must now think of the "forty-year educational experience," only the first four years of which are spent in continuous residence in the school of medicine. These first four years must be designed to provide the physician with a basic foundation—principles, if you will—on which he may continue to build during the remainder of his professional life. I am much more interested in seeing that a medical student understand the basic action of a particular drug than that he be familiar with which drug company sells what brand. If the student has the idea that he has only four years in which to learn all of the things that will make him a finished physician, he is inevitably going to seek practicality at the expense of a firm and strong scientific foundation. If, on the other hand, he can be indoctrinated with the idea of continuing medical education, it will be much easier for him to understand the need for basic physiology, pharmacology, biochemistry, etc. —Franklin D. Murphy, M.D., The Concept of Continuation Education in Medicine, *California Medicine*, February 1951.

COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary.*

Water-Soluble Chlorophyll Derivatives.—Chloresium (Rystan). —Water-soluble derivatives of chlorophyll consist chiefly of the copper complex of the sodium and potassium salts of saponified chlorophyll.

Actions and Uses.—A mixture of the water-soluble derivatives of chlorophyll is employed as a bland, soothing, nonirritating preparation for topical application. A solution or ointment is used for deodorization and relief of itching in wounds, ulcers, burns and dermatoses. It does not exert a significant disinfectant action and the mechanism of its deodorant effect on foul smelling chronic lesions is not clear. Such lesions, which are due primarily to chronic infection, may require surgical intervention and the use of anti-infective agents. Water-soluble chlorophyll derivatives may aid in producing a clean granulating wound base and a condition suitable for the normal repair of tissues. Conclusive evidence is lacking that chlorophyll derivatives stimulate granulation or epithelialization beyond the normal rate of healing, or that such derivatives are more effective than other agents for that purpose.

Dosage.—A solution containing 0.2 per cent water-soluble chlorophyll derivatives is applied topically to the affected areas once, or several times daily, as desired.

An ointment containing 0.5 per cent may be spread over affected areas and covered with fine-mesh gauze or other dressing. Applications are repeated at each change of dressing.

Tests and Standards.—

Physical Properties: Water-soluble chlorophyll derivatives present as potassium and sodium salts occur as a blue-black glistening powder having an amine-like odor. They are freely soluble in water, slightly soluble in alcohol and chloroform, and very slightly soluble in ether. A 1 per cent solution is dark green and has a *p*H between 9.5 and 10.2.

Identity Tests: Transfer about 0.5 Gm. of the water-soluble chlorophyll derivatives to a crucible and char them. Add about 1 ml. of sulfuric acid and heat to a dull red heat. Cool, add another 1 ml. portion of sulfuric acid and repeat the heating. Cool the crucible. Heat the residue on a steam bath in 10 ml. of water containing 1 ml. of diluted hydrochloric acid. Saturate the solution obtained with hydrogen sulfide and filter the resulting mixture. Save the filtrate. Heat the precipitate in diluted nitric acid: a light blue solution forms, which turns deep blue on addition of excess ammonia T.S. *(presence of copper).*

Boil the filtrate to remove the hydrogen sulfide, make it slightly alkaline with ammonia T.S. and again saturate it with hydrogen sulfide. Filter the mixture, save the filtrate, dissolve the black precipitate in about 2 ml. of nitric acid, heat the solution on a steam bath and dilute it to about 10 ml. with water. Add several drops of ammonium thiocyanate T.S.: a deep red solution forms *(presence of iron).*

Acidify the filtrate with diluted nitric acid, evaporate to dryness and carefully ignite to remove the ammonium salts. Dissolve the residue in about 5 ml. of water and acidify the solution with hydrochloric acid. By means of a platinum wire transfer a drop of the solution to a nonluminous flame: an intense yellow color is imparted to the flame *(presence of sodium).* Repeat the flame test observing the results through a cobalt blue glass: a reddish-violet coloration appears *(presence of potassium).*

A 0.001 per cent solution, prepared as directed in the assay, exhibits absorption maxima at approximately 4050 Å [specific absorbancy, E(1%, 1 cm.), is tentatively given the value of 565] and 6300 Å. The ratio of the optical densities at 4050 and 6300 Å is between 3.4 and 3.9.

Purity Tests: Dry about 1 Gm. of water-soluble chlorophyll derivatives at 105° for 4 hours: the loss in weight is not more than 4 per cent.

Char about 0.5 Gm. of water-soluble chlorophyll derivatives, accurately weighed, over a low flame. Cool the charred mass, cautiously add about 1 ml. of sulfuric acid and heat to a dull red heat. Cool and repeat the addition of 1 ml. of sulfuric acid and continue ignition until no carbon remains: the amount of residue is about 29 per cent.

Assay: Transfer 0.1 Gm. of dry water-soluble chlorophyll derivatives to a 100 ml. volumetric flask and fill to volume with phosphate buffer of *p*H 7.5 (21 volumes of 0.15 M Na_2HPO_4 and 4 volumes of 0.15 M KH_2PO_4). Mix the solution thoroughly and transfer exactly 10 ml. of the solution to a second 100 ml. volumetric flask and dilute to volume with the buffer. Repeat the 10 to 100 dilution with the buffer. Determine the optical density of the final solution (0.001%) at 4050 Å with a spectrophotometer. Mg. of water-soluble chlorophyll derivatives present per ml. of solution = optical density at 4050 Å ÷ 56.5. The amount of water-soluble chlorophyll derivatives is not less than 90.0 per cent.

Dosage Forms of Water-Soluble Chlorophyll Derivatives

OINTMENT.—*Identity Tests:* The solution, as prepared for assay, responds to the spectrophotometric identity tests listed in the monograph for Water-Soluble Chlorophyll Derivatives.

Assay: Transfer a quantity of the ointment equivalent to 20 mg. of water-soluble chlorophyll derivatives to a 100 ml. volumetric flask and add about 50 ml. of phosphate buffer of *p*H 7.5 (21 volumes of 0.15 M Na_2HPO_4 and 4 volumes of 0.15 M KH_2PO_4). Shake the solution until the ointment has completely dissolved, then fill to volume with the buffer and mix thoroughly. Transfer exactly 5 ml. of the solution to a second 100 ml. volumetric flask, fill to volume and mix thoroughly. Determine the optical density on the spectrophotometer at 4050 Å. Mg. of water-soluble chlorophyll derivatives present per ml. of solution = optical density at 4050 Å ÷ 56.5. The amount present is not less than 90.0 nor more than 110.0 per cent of the labeled amount.

SOLUTION *(Plain). Identity Tests:* The solution, as prepared for assay, responds to the spectrophotometric identity tests listed in the monograph for Water-Soluble Chlorophyll Derivatives.

Assay: Transfer a quantity of the solution equivalent to 20 mg. of water-soluble chlorophyll derivatives to a 100 ml. volumetric flask, fill to volume with phosphate buffer of *p*H 7.5 (21 volumes of 0.15 M Na_2HPO_4 and 4 volumes of 0.15 M KH_2PO_4) and mix thoroughly. Proceed as directed in the assay of the ointment starting with, "Transfer exactly 5 ml. of the solution to a second 100 ml. volumetric flask . . ." The amount present is not less than 90.0 nor more than 110.0 per cent of the labeled amount.

Ointment Chloresium 0.5%: 28.35 Gm., 113.4 Gm. and 454 Gm. jars. An ointment containing 5 mg. of water-soluble chlorophyll derivatives in each Gm. of water miscible base. Rystan Company, Inc., Mount Vernon, N. Y.

Solution Chloresium 0.2%: 59.14 cc., 236.5 cc. and 946.3 cc. bottles. A solution containing 2 mg. of water-soluble chlorophyll derivatives in each cc. (U. S. Patent 2,120,667 and 2,434,649. U. S. Trademark 408,787). Rystan Company, Inc., Mount Vernon, N. Y.

Nicotinamide-U.S.P. (See New and Nonofficial Remedies 1950, page 482).

Tablets Niacinamide: 50 mg. and 100 mg. Physicians' Drug and Supply Company, Philadelphia, Penn.

Pertussis Vaccine-U.S.P. (See New and Nonofficial Remedies 1950, page 447).

Pertussis Vaccine: 20 cc. vials (five immunizations: three injections of 1.0 cc., 1.5 cc. and 1.5 cc.). 20,000 million *H. pertussis* in each cc. Preserved with thimerosal 1:10,000. Pitman-Moore Company, Indianapolis, Ind.

Sodium Ascorbate Injection-U.S.P. (See New and Nonofficial Remedies 1950, page 472).

Solution Sodium Ascorbate: 2 cc. and 5 cc. ampuls. A sterile aqueous solution containing sodium ascorbate equivalent to 50 mg. and 100 mg., respectively, of ascorbic acid in each cc. Preserved with 0.5 per cent chlorobutanol and 0.1 per cent sodium bisulfite. Gold Leaf Pharmacal Company, Inc., New Rochelle, N. Y.

Pertussis Vaccine, Alum Precipitated-U.S.P. (See New and Nonofficial Remedies 1950, page 448).

Pertussis Vaccine, Alum Precipitated: 5 cc. vials (five immunizations). 40,000 million *H. pertussis* in each cc. Preserved with thimerosal 1:7,500. Pitman-Moore Company, Indianapolis, Ind.

Pyridoxine Hydrochloride (See New and Nonofficial Remedies 1950, page 485).

Tablets Pyridoxine Hydrochloride: 25 mg. and 50 mg. U. S. Vitamin Corporation, New York, N. Y.

Secobarbital Sodium (See New and Nonofficial Remedies 1950, page 406).

Pulvules Seconal Sodium: 32 mg. Eli Lilly and Company, Indianapolis, Ind.

COUNCIL ON FOODS AND NUTRITION

The Council has authorized the publication of the following report. JAMES R. WILSON, M.D., *Secretary.*

FROZEN ORANGE JUICE CONCENTRATE

The development of new techniques of food preservation has made available to the public a wide variety of frozen concentrated fruit juices conveniently packaged for family use.

Perhaps the most popular of these products is frozen concentrated orange juice. Since its introduction in 1947, consumption has steadily mounted as evidenced by the fact that approximately 35 per cent of all frozen food sales (exclusive of ice cream) is devoted to frozen concentrated orange juice. It is apparent, therefore, that this product is of sufficient public health importance to warrant a report by the Council on Foods and Nutrition.

The demand for orange and other citrus fruit juices is perhaps attributable largely to the public's awareness of the nutritive value of these foods, particularly their vitamin C potency. Although this is commendable, it has diverted attention away from many other excellent natural sources of this vitamin. Among these are such plentiful and readily available edibles as potatoes, tomatoes, various greens, raw cabbage, green peppers, strawberries and cantaloupe. These foods, as well as the citrus products, together with those other foods that contribute less significantly, deserve consideration in all instances having to do with the maintenance of normal daily intakes of vitamin C. Although this report is concerned entirely with orange juice as a source of this essential nutrient, it is not the intent of the Council on Foods and Nutrition to minimize the importance of other foods of high vitamin C content.

A number of pertinent observations have been made concerning factors that influence the vitamin C content of fresh oranges, all of which have a bearing on the nutritive value of the frozen concentrated juice. For example, studies indicate that the vitamin C content of fresh oranges may show considerable variation. This is due in part to seasonal influences. In general, fruit picked in midseason tends to be higher in vitamin C content than does that picked early or late in the season. Other factors, including variety of fruit, degree of ripeness and condition of the soil, also significantly affect the vitamin C content of the fresh fruit.

In this connection, it is worthy of note that in order to insure a high vitamin C content in the concentrated product, it is essential that fresh oranges of good quality picked at the proper time be used.

It would appear, then, from studies made to date, that frozen concentrated orange juice, properly processed under low temperature evaporation may be an excellent and dependable source of vitamin C.

The following considerations concerning frozen concentrated orange juice have led the Council on Foods and Nutrition to consider brands of this product for acceptance and, when accepted, to bear the Council's Seal of Acceptance.

VITAMIN CONTENT

As stated above, frozen orange juice concentrate is a reliable source of vitamin C when fruit of high nutritive quality is used in processing. Moreover, only negligible amounts of the original vitamin C content of the fresh fruit are lost if properly processed. In fact, it is reliably estimated that approximately 98 per cent of the vitamin C content of the fresh fruit may be retained in the frozen concentrated juice when modern acceptable methods are used.

VITAMIN RETENTION

When held in storage at the freezing point, or below, there is practically no loss of vitamin C.

The danger of vitamin C loss is most likely to occur as a result of improper handling or storage in the home. For example, if, after reconstituting, the juice is allowed to stand in open containers at room temperature, appreciable losses will occur. However, if the reconstituted juice is placed in the refrigerator at 40° F., vitamin C losses will be negligible. Ideally, the juice should be consumed as soon as possible after reconstituting to obtain maximum vitamin C values.

PALATIBILITY AND COLOR

In general, the flavor of frozen concentrated orange juice is excellent. However, the flavor tends to vary owing largely to natural variations in the sugar-acid ratio. It is also influenced by the peel oil content. On the whole, however, the flavor of the concentrated product corresponds favorably with that of fresh orange juice. Thus, orange juice concentrate is well accepted from the standpoint of its taste or flavor.

Color will vary appreciably from batch to batch. Color variation, however, has no effect on the vitamin C content.

USEFULNESS

Concentrated frozen orange juice may be used in all instances wherein there is need for maintaining or increasing the daily intake of vitamin C. In fact, it may be considered as the nutritive equal of fresh orange juice. Thus, it will meet the need for vitamin C intake in the diets of all persons, including infants.

It should be stated that Council acceptance of this product has been contingent on the manufacturer's fulfilment of certain requirements, the most important being:

1. That the product contain 40 mg. of vitamin C per 100 ml. (about 3⅓ oz.) of juice at the time of packing and that this represents retention of the ascorbic acid present in the original fruit—i. e., attaining this level through the addition of pure ascorbic acid is unacceptable to the Council.

2. That the packer of an accepted juice demonstrate that consistently high levels of vitamin C are maintained, and that evidence of this be furnished to the Council by means of daily laboratory reports indicating the vitamin C content of each day's pack during the processing season.

3. That all advertising claims for an accepted brand be proved in a manner acceptable to the Council on Foods and Nutrition.

There are at present three brands of frozen concentrated orange juice which have fulfilled the requirements of the Council and are eligible to display its Seal of Acceptance. They are (1) Birds Eye brand, packed by the Birds Eye-Snider Division of the General Foods Corporation, (2) Donald Duck brand, packed by Florida Citrus Canners Cooperative, and (3) Priceless brand packed by Florida Citrus Canners Cooperative.

It is perhaps pertinent to refer in this report to a marketing practice that may mislead the consumer. This involves the display of imitation orange juice of distinctly inferior nutritive value in containers similar to those which are used for real orange juice. Imitation orange juice generally consists essentially of sweetened water colored and flavored to resemble natural orange juice. Sometimes vitamin C is added. The consumer should exercise caution when purchasing orange juice to make sure that these nutritionally inferior products will not be mistakenly bought in place of natural orange juice.

SUMMARY

In view of the several considerations here recounted, it is the opinion of the Council that frozen concentrated orange juice is eligible for acceptance and use of the Council's seal when not less than 40 mg. of vitamin C is retained in each 100 ml. of reconstituted juice and when advertising claims are proved.

Furthermore, evidence submitted to the Council indicates that the frozen concentrated product can be as valuable from the standpoint of its nutritive content as is fresh orange juice. The Council also holds that frozen concentrated orange juice made from properly selected and prepared fruit is a dependable source of vitamin C and that it may be useful in the diets of persons of all ages.

THE JOURNAL
OF THE AMERICAN MEDICAL ASSOCIATION
535 N. DEARBORN ST. . . . . CHICAGO 10, ILL.
Edited by . . . . . AUSTIN SMITH, M.D.
Associate Editor . . . . . JOHNSON F. HAMMOND, M.D.
Editor for Medical Literature Abstracts . GEORGE HALPERIN, M.D.

Subscription price . . Fifteen dollars per annum in advance
Cable Address . . . . . "Medic, Chicago"

AVIATION MEDICINE

Twenty-five years ago the airplane was an unreliable machine capable of flying 70 miles per hour and with a ceiling of 12,000 feet. Today, some airplanes have 5,000 horse power engines capable of speeds of more than 700 miles per hour and of operating above an altitude of 45,000 feet. The medical problems of military aviation that have arisen with the development of the airplane have been ably discussed by Brigadier Gen. Edward J. Kendricks in his Kober Lecture delivered at Georgetown University, March 28. Military medicine is definitely a part of worldwide medicine. That military and civilian medicine are one is shown by the fact that 97 per cent of the medical officers on duty with the United States Army in World War I were civilian physicians in uniform. A further indication is the recent creation of a Section on Military Medicine by the House of Delegates of the American Medical Association. The first indication that aviation medicine was destined to be a new medical specialty came in 1914, when it was recognized that in exploring a new environment man was encountering new physical, mental and physiological hazards. At first, these problems appeared to be purely medical, but it was soon learned that more than medicine was involved and that a team should be developed to deal with the complex problem of keeping the aviator, the airplane and its power plant as efficient and safe as possible. To this team, comprised of engineers, doctors and scientists, it became evident that aviators must be carefully selected and classified in a way to indicate their ability to function at high altitudes, as well as to fly at night. There must be also constant observation of fliers for detection of evidence of fatigue, fear of flying, staleness and increased recklessness. In 1917 this nation established a medical research board which was directed to evaluate ways and means of caring for fliers. Thus, a new medical specialty was launched, and in 1919 the first school for Flight Surgeons became a part of the medical research laboratory which then was at Mineola, Long Island.

From the first, advances in aeronautics greatly influenced the trend of aviation medicine. The development of more powerful airplanes resulted in the medical consideration of gravitational force imposed on the pilot during curvilinear flying and escape from high speed aircraft. When airplanes were developed that could reach an altitude of 25,000 feet, a serious aeromedical problem arose. The reduced density has two serious effects on the body, producing aeroembolism and anoxia. It was found that the probability of a flier being incapacitated by aeroembolism, or "bends," at 25,000 feet after an hour's exposure was about one in 10, while at 40,000 feet with only 20 minutes' exposure the probability increased to 9 in 10. Above 50,000 feet man can tolerate only very short exposure without seriously suffering from aeroembolism. At 63,000 feet human blood boils at body temperature. At these extreme altitudes man's useful consciousness is limited to a very few seconds.

All operational aircraft capable of sustained flight above 20,000 feet must have cabin pressurization to protect the occupants against hypoxia and decompression sickness. Cabin pressurization greatly reduced the oxygen problems, but it presented a new danger, that of explosive decompression, or a sudden loss of cabin pressure resulting from either mechanical failure or enemy action. The two most significant factors associated with decompression are the expansion of gases within the human body and the time under which the decompression takes place. For flying up to 40,000 feet with the cabin altitude around 10,000 feet, this relative expansion of internal body gases is fivefold. The time in which decompression takes place depends on the size of the hole caused by structural failure in relation to the volume of the cabin pressure itself. In general, explosive decompression, involving considerable expansion of internal body gases, can be tolerated safely if the time of decompression is as much as several seconds. In commercial aircraft and pressurized bombers, the cabin volume is relatively large in relation to the probable blowout area, so that the danger of explosive decompression is small. In fighter aircraft, where the hole probably would be great in relation to the cabin volume, decompression would take place in a fraction of a second and sudden expansion of body gases would cause serious internal injuries. Under these conditions the best preventive is either a reduction of cabin pressure differential or the use of protective clothing that restrains the chest wall within its extensible limits.

Speed, as such, has no effect on man if he flies in a straight line and is protected from wind blast and friction; however, the forces involved in attaining or suddenly losing these speeds as well as the G-forces resulting from turns at high speed may have very serious effects. When a pilot is exposed to 2-Gs, he is exposed to a force doubling his weight, and 20-Gs would mean exposure to a force 20 times his weight. The direction in which the force is applied is of great importance. The average pilot can tolertae 4 to 5-Gs for 10 to 15 seconds while flying in the conventional sitting position, and he can increase G tolerance by slightly raising his legs or straining. The G suit will increase tolerance to positive G by a factor of 1 to 1.2-G. It is anticipated that the newer type G suit will afford 2.8 to 3-G protection, thus, affording G protection adapted to higher performance of aircraft.

The pilot relies on vision to avoid dangerous aircraft attitudes and flight obstacles as well as for identifying his target. The target or obstacle must be identified at great distances, otherwise, with present high speed, the target point will be passed and, in combat, if there is delay in recognition and proper reaction, the airplane may not be turned rapidly enough to bring it into firing position.

Aviation medicine today is concerned also with keeping the pilot cool. High speed aircraft become heated by the friction impact of air on their surfaces. When an airplane travels at 650 miles per hour at sea level the cockpit temperature may be as much as 70 F. higher than the outside temperature. In the newer jet fighters, equipped with air-conditioning systems, a pilot can fly over the North Pole at altitude wearing only a summer flying suit; but should he be forced down his chances of survival in this garment are few. A new system to protect the pilot from such heat has been designed to adjust automatically for wide changes of cabin temperature.

When jet aircraft were introduced, German researchers attributed certain sudden pilot deaths to ultrasonic vibrations. By 1948 our own researchers had accumulated data on ultrasonic components of sound fields generated by jet and rocket engines that make it unlikely that they are serious hazards to man. Less than 0.5 per cent of the acoustic energy present in these frequencies is absorbed from the air by the human body. However, unprotected exposure to this sound field for 30 minutes or more will produce a temporary hearing loss of 20 decibels or more and may with repeated exposure of long duration produce permanent hearing loss. Much study must still be done, however, for proper evaluation of the effects.

In the development of high speed aircraft, it became evident that at 400 to 600 miles per hour, the flyer could not bail out without being struck by some part of the airplane. Research produced an injection seat that shot the pilot upward above the tail piece of his plane, where of course, he is met by terrific wind blast, friction, tumbling and the necessity to descend safely to earth. With some modifications of the original design, this seat has been used safely by volunteers at speeds of more than 500 miles per hour and from altitudes above 40,000 feet. For altitudes above 50,000 feet the pilot must be enclosed in a kind of personal pressure cabin provided by a garment worn under other clothing which can be pressurized in an emergency.

Aviation medicine working in cooperation with engineers, physicists, biochemists, physiologists and other allied scientists has met many of the complex problems of military aviation. There are today about 800 physicians in the Air Force or Navy who have graduated from the Air Force School of Aviation Medicine or the Naval School of Aviation Medicine. Most of these flight surgeons are practicing aviation medicine with airmen in the field or on the carrier, where they live, eat and fly with the fliers. The flight surgeon checks their equipment for efficiency and continually indoctrinates the airman in its use. He watches over them for psychological and physical changes due to combat and emotional strain. With his knowledge of high altitude physiology and the hazards of high speed flight, he makes his choice and use of therapeutic agents. He is fully aware of limitations imposed by altitude on such every day conditions as the common cold and the effects of antihistaminics. The flight surgeon must not only be a good doctor, he must fully understand the requirements of military medicine. Something of the flight surgeon goes with every airplane over the target.

FROZEN FOODS

Since frozen foods are assuming a more important place in the American diet, accurate information on their nutritional value becomes increasingly important. Their growing popularity is indicated by the fact that in the short span of three years (1946 to 1949) the annual pack of frozen orange juice concentrate alone rose from 2,500,000 pounds to more than 134,000,000 pounds. Because of the public health significance of frozen orange juice, the Council on Foods and Nutrition has adopted the statement which appears on page 35 of this issue.

The quality of foods, whether frozen in home freezers or frozen commercially, depends on three basic factors: (1) selection, (2) shortness of the interval between harvesting and packing and (3) care in processing and storage. Selection for quality and nutritive value of fresh fruits and vegetables depends on such factors as variety, climate, sunlight and soil. Fine flavor and nutritive value often go hand in hand. Sherman early expressed the view that fruits when most highly prized for their flavor are usually richest in nutrient content. The retention of flavor as well as nutrient value is generally improved in direct proportion to the shortness of the time interval between harvesting and final packing. This is especially true in such vegetables as peas and string beans. The vitamin C content of spinach, for instance, may be reduced as much as one third if it is allowed to stand in boxes overnight,[1] and the vitamin C in freshly picked peas may be reduced 50 per cent in 24 to 48 hours.[2] Refrigeration helps to retard the loss of certain nutrients, such as ascorbic acid, when it is necessary to delay processing for any appreciable length of time.

Care in processing and storage involves the application of new information concerning processing and storage at low temperatures. Available evidence indicates that freezing does not materially alter the nutritional value of foods.[3] Freezing does not split meat proteins or denature them.[4] It does not significantly reduce the carotene content of various vegetables tested, including yellow corn, asparagus, lima beans, spinach, broccoli and peas.[5] Losses in the thiamine content of frozen foods are in general not great.

Much of the loss of the water-soluble vitamins and other water-soluble constituents of vegetables preserved by freezing, canning or dehydration occurs as the result of the preliminary blanching or precooking to which they are subjected. Blanching is done in order to inactivate enzymes, retard the subsequent loss of carotene and ascorbic acid during storage and to prevent the development of undesirable off-flavors. Blanching in water frequently reduces the ascorbic acid content of vegetables as much as 16 per cent.[6] Such losses tend to be minimized when the blanching time is shortened by the use of boiling water and the same water is used repeatedly.

1. Dehydration and Vitamin Stability, Nutrition Rev. **1**: 187 (April) 1943.
2. Rose, M. S.: The Effect of Quick Freezing on the Nutritive Values of Foods, J. A. M. A. **114**: 1356 (April 6) 1940.
3. Lee, F. A.: Nutritional Value of Frozen Foods, Nutrition Rev. **9**: 1 (Jan.) 1951.
4. Smorodinter, I. A.: Chem. Abst. **38**: 6410, 1944.
5. Fitzgerald, G. A., and Fellers, C. R.: Carotene and Ascorbic Acid Content of Fresh Market and Commercially Frozen Fruits and Vegetables, Food Research **3**: 109 (Jan.-April) 1938.
6. King, C. G., and Tressler, D. K.: Proc. Conf. Food Inst. Food Technologists, 1940, p. 123.

The use of flowing steam may still further reduce the loss of soluble materials.[7]

Another important factor in the preservation of vitamins and flavor is the rate of freezing of the food. It has been stated that the satisfactory maintenance of flavor and vitamin content depends on the cooling of the center of the package to 0 F. in one and a half to two hours. Recent work, however, has demonstrated that this may be lengthened somewhat. Observers have found that even eight to 12 hours may be used for freezing without significant impairment.[8] This means the products frozen in home freezing cabinets can be as nutritious as those obtained by quick freezing. The freezing time should not be increased beyond 12 hours, however, because of deteriorative changes that may occur if the temperature is not dropped rapidly enough throughout the entire package.

Since frozen foods are often stored over long periods of time before being eaten, it also becomes important to know whether such storage reduces the nutritional value of the food. Storage at 0 F. seems quite satisfactory, at least when the storage period is a year or less. Losses become much greater if the temperature is allowed to rise to 10 F. or is allowed to fluctuate between 0 and 20 F. At these temperatures peas lose 50 per cent, beans 80 per cent, and strawberries 65 per cent of their original ascorbic acid in one year and show color deterioration.[9] Apparently storage at 0 F. or lower is necessary for satisfactory preservation of most foods over prolonged periods, although orange juice stored at temperatures between 8 and 12.2 F. for one and a half years showed no loss of vitamin C.[9] Only limited studies of the effect of storage on other vitamins have been made. No carotene was lost from 27 different vegetables stored at 0 F. for three months, although there was some evidence of loss after six months.[9] The thiamine content of snap beans was reported as reduced to 10 to 20 per cent after storage of six months at 6 F., but the thiamine content of pork was not influenced by temperatures from 0 to 20 F.[9] By way of comparison, dehydrated rutabagas and cabbages stored at room temperature for three to four months lost approximately 30 per cent of the ascorbic acid present at the beginning of the storage period, 70 to 80 per cent of the carotene and none of the thiamine.[9]

When frozen foods are selected, prepared and stored according to the best of currently available scientific knowledge, they can compare favorably in nutrient content and flavor with the fresh product.

7. Guerrant, N. B.; Vanich, M. G.; Fardig, O. B., and Ellenberger, H. A.: Effect of Duration and Temperature of Blanch on Vitamin Retention by Certain Vegetables, Indust. & Engin. Chem. **39**: 1000, 1947.

8. Lee, F. A.; Gortner, W. A., and Whitcombe, J.: Effect of Freezing Rate on Vegetables, Indust. & Engin. Chem. **38**: 341, 1946; Effect of Freezing Rate on Fruits, Food Technology **3**: 164, 1949. Lee, F. A., and Gortner, W. A.: Effect of Freezing Rate on Vegetables, Refrig. Engin. **57**: 148 and 184, 1949. Lee, F. A.; Brooks, R. F.; Pearson, A. M.; Miller, J. I., and Volz, F.: Effect of Freezing Rate on Meat, Food Research **15**: 8, 1950.

9. Tressler, D. K.; Moger, J. C., and Wheeler, K. A.: Losses of Vitamins Which May Occur During the Storage of Dehydrated Vegetables, Am. J. Pub. Health **33**: 975 (Aug.) 1943.

THE DISTINGUISHED SERVICE AWARD

One of the highest honors, the American Medical Association can bestow on its Fellows, the Distinguished Service Award, will be presented in Atlantic City at the Inaugural Meeting on Tuesday, June 12, 1951. This award "for meritorious services in the science and art of medicine" has been made each year since 1938, when it was presented to Dr. Rudolph Matas of New Orleans.

Any Fellow of the American Medical Association may submit nominations, which should be sent, together with a record of the scientific and other attainments of the nominees, to Dr. George F. Lull, Secretary of the Association, 535 North Dearborn St., Chicago 10, who will refer them to the Committee on Distinguished Service Award. After consideration of all nominations received, the Committee will submit five names to the Board of Trustees and the Board will select three of the five for presentation to the House of Delegates at its first meeting in Atlantic City. The House of Delegates makes the final selection by official ballot.

The Distinguished Service Medal has been awarded to 13 illustrious men of American medicine, in whose selection the Association has done honor to itself as well as to the men awarded. The list of recipients includes, besides Dr. Matas, Dr. James B. Herrick of Chicago, Dr. Chevalier Jackson of Philadelphia, Dr. James Ewing of New York, Dr. Ludvig Hektoen of Chicago, Dr. Elliott P. Joslin of Boston, Dr. George Dock of Pasadena, Calif., Dr. George R. Minot of Boston, Dr. Anton J. Carlson of Chicago, Dr. Henry A. Christian of Boston, Dr. Isaac A. Abt of Chicago, Dr. Seale Harris of Birmingham, Ala., and Dr. Evarts A. Graham of St. Louis.

New nominations should be in the office of the Secretary of the Association not later than May 25, 1951.

SPHINCTEROTOMY FOR PANCREATIC DISE

Frequently the pancreatic duct drains into the ampulla of Vater and shares a passageway with the common bile duct into the intestine. In such instances an obstruction at the duodenal orifice could cause pancreatitis by a reflux of bile into the pancreas. In 1919 Archibald [1] reported that this situation could be produced by a spasm of the sphincter of Oddi and recommended sphincterotomy as the treatment for chronic pancreatitis. By inducing contraction of this muscle during cholangiographic study of such cases, Doubilet and Mulholland [2] have demonstrated a regurgitation of the radiopaque material into the pancreatic duct. When this phenomenon is present, the sphincteral muscle is clipped by a specially designed sphincterotome, which is manipulated through an opening in the common duct. There is danger of the surrounding duodenal musculature being cut with the scalpel if these muscle fibers are incised through a transduodenal exposure of the ampulla. A cholecystectomy eliminates any residual function of the gallbladder. The results have been uniformly satisfactory.

These authors [3] have recently reported that symptoms in calcification of the pancreas have been relieved in this same manner. The calcific deposits are a quiescent complication of chronic pancreatitis. The pain arises from the concurrent inflammatory changes in such a gland.

1. Archibald, E.: The Experimental Production of Pancreatitis in Animals as the Result of the Resistance of the Common Duct Sphincter, Surg., Gynec. & Obst. **28**: 529 (June) 1919.

2. Doubilet, H., and Mulholland, J. H.: The Surgical Treatment of Recurrent Acute Pancreatitis by Endocholedochal Sphincterotomy, Surg., Gynec. & Obst. **86**: 295 (March) 1948.

3. Doubilet, H., and Mulholland, J. H.: Surgical Treatment of Calcification of the Pancreas, Ann. Surg. **132**: 786 (Oct.) 1950.

ORGANIZATION SECTION

DEATH OF JEWEL F. WHELAN

Miss Jewel Whelan, who served 42 years in the editorial department of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and as secretary to the Board of Trustees, died on April 14 after a long illness due to a heart condition. Miss Whelan served as assistant to Dr. Morris Fishbein until his retirement on Dec. 1, 1949. She began her long and faithful service with the American Medical Association in 1909 as secretary to the late assistant editor Dr. E. E. Hyde; then, for 15 years, she was secretary to the late Dr. George H. Simmons until his retirement as editor of THE JOURNAL in 1924, at which time she took over the handling of the A. M. A. specialty journals. Miss Whelan's death is a distinct loss to the Association.

EMERGENCY MEDICAL SERVICE HAS NEW SECRETARY

Attorney C. Joseph Stetler recently was appointed Secretary of the American Medical Association Council on National Emergency Medical Service, succeeding Dr. Robert M. Hall, who returned to active duty with the Army. For the last 16 years Mr. Stetler has served with various government agencies. His most recent assignment was that of director of the Legislation and Opinions Service of the War Claims Commission in Washington.

MEDICAL LEGISLATION

FEDERAL

Federal Agency for Handicapped.—Senator Neely of West Virginia introduced S.1318, which would establish a federal agency for handicapped persons. Identical bills have been introduced in the House of Representatives by Representative Withrow of Wisconsin (H. R. 3747), by Representative Havenner of California (H. R. 3762) and by Representative Rhodes of Pennsylvania (H. R. 3769). This makes a total of eight identical bills in Congress proposing to set up a federal agency for handicapped persons. The proposed agency would have independent agency status but would be based in the Department of Labor for "housekeeping" purposes. The present Office of Vocational Rehabilitation located in the Federal Security Agency would be abolished and its functions transferred to the new agency. There would be several new programs developed; these were described briefly in a previous issue of THE JOURNAL under H. R. 3559.

Reorganization of Federal Agencies.—Representative Dawson of Illinois introduced H. R. 3686, proposing a reorganization of the Veterans' Administration in accordance with the recommendations of the Commission on Organization of the Executive Branch of the Government. The bill would reorganize the VA along the lines recommended in the Hoover Report.

Representative Dawson also introduced H. R. 3688, which would establish a federal department of health and consolidate certain hospital, medical and public health functions of the government under it. This bill is identical with several other bills previously reported.

Public Assistance.—H. R. 3768 was introduced by Representative Reed of New York. It would repeal provisions of the Social Security Act, which requires state plans for old age assistance, aid to dependent children, aid to the blind, and aid to the permanently and totally disabled, to restrict the use or disclosure of information concerning applicants and recipients to purposes directly connected with the administration of such plans. An identical bill, S. 1099, was introduced in the Senate some time ago and was previously reported in THE JOURNAL.

Survey of Sickness.—Senator Murray of Montana introduced S. 1328, which would provide for a survey of sickness in the United States. This bill is identical with H. R. 3339 (reported previously) except that this bill calls for a similar survey at four-year intervals.

STATE

Arizona

Bill Enacted.—H. 116 has become Chapter 119 of Laws of 1951. It authorizes the state board of education to accept federal funds for use in connection with the **school lunch program.**

California

Bills Introduced.—A. 71, to amend the Business and Professions Code, proposes regulations relating to the **reinstatement of licenses** by persons serving in the armed forces. A. 1210, to amend the Business and Professions Code relating to the practice of medicine, proposes that the provisions applicable to applications by United States commissioned medical officers shall also be applicable to **applicants who were in the armed forces** of the United States during the period from Dec. 7, 1941 to Dec. 31, 1946 and who were bona fide residents of California before entering medical school. A. 2672, to amend the Business and Professions Code, proposes that the words **"diagnose" or "diagnosis"** shall include any undertaking by any method, device or procedure whatsoever, and whether gratuitous or not, to ascertain or establish whether or not a person is suffering from any physical, mental or nervous disorder. The proposal would further provide, however, that the performance of psychological services on referral from a person licensed under the Business and Professions Code would not be a violation of the law. A. 2675, to amend the Business and Professions Code, would require **applicants for the physicians' and surgeons' examination,** who graduate from school after January 1, 1955, to present evidence of having completed a three-year resident course of college grade, including the subjects of physics, chemistry and biology, before commencing the study of medicine. A. 2678, to amend the Business and Professions Code, proposes that every **physician** who while in attendance on patients is **intoxicated** to such an extent as to impair his ability to conduct the practice authorized by his certificate shall be guilty of a misdemeanor. S. 1553, to amend the Insurance Code, proposes that nothing therein should be construed to authorize an insurer to furnish services of hospitals, nurses, or physicians and surgeons or in any manner to direct, participate in or control the **selection of the hospital or physician and surgeon** from whom the insured secures services. S. 1625, proposes the creation of a **Board of Vocational Nurse Examiners** and defines the practice of vocational nursing as the performance of services requiring those technical manual skills acquired by means of a course in an accredited school of vocational nursing or its equivalent practiced under the direction of a licensed physician or registered professional nurse.

Florida

Bills Introduced.—H. 141, proposes to make it unlawful for any person whose interest is adverse to an injured person or who is acting on behalf of anyone whose interest is adverse to an injured person to take or attempt to take any statement, written or oral, from such injured person or negotiate or attempt to negotiate a settlement of or attempt to obtain the execution of a release from liability on account of injuries sustained by such injured person while such injured person is a patient in any hospital, sanitarium or nursing home within fifteen days of the time such injuries were sustained. No statement taken in violation of the provisions of this proposal would be admissible in evidence or otherwise used in any manner in any civil action arising out of the injuries. Accepted from the proposal would be the taking of statements by law enforcement officers in the line of official duty. H. 194, proposes the enactment of a licensing law for **chiropractic hospitals,** sanatoria, or other related institutions.

Illinois

Bills Introduced.—H. 654, proposes the enactment of a **hospital licensing** law. S. 428, proposes regulations for the prevention and control of **rabies.**

Kansas

Bills Enacted.—H. 72, was approved March 28, 1951. It amends the law relating to **non profit medical service corporations** by setting up provisions relating to the establishment of reciprocity benefits which may be applicable to non-resident employees of corporations transacting business in Kansas. H. 235, was approved March 30, 1951. It amends the law relating to the disposition of **unclaimed dead human bodies** and the use of such bodies by the department of anatomy of the medical school of the university of Kansas.

The summary of federal legislation was prepared by the Washington Office of the American Medical Association and the summary of state legislation by the Bureau of Legal Medicine and Legislation.

Massachusetts

Bills Introduced.—H. 2315, proposes the creation of a special commission to make a study relating to the sentencing, treatment and release of **female prisoners in the penal institutions** of the state under the control of the department of correction. H. 2324 (Appendix C), proposes the creation of a special commission to make an investigation of the advisability of **establishing a medical school** and a dental school under the jurisdiction of the trustees of the university of Massachusetts. H. 2402, proposes the establishment within the Department of Public Safety of a board for the regulation of **toxic substances** to make rules and regulations effecting the use, handling and distribution of toxic substances.

Michigan

Bills Introduced.—H. C. R. 39, proposes the creation of a legislative committee to investigate the **conditions in private hospitals** in the state which are not recognized by the American College of Physicians and Surgeons and to investigate conditions existing in connection with the practicing of non-licensed doctors in the state. H. C. R. 40, proposes the creation of a special committee to study the needs of the several county tuberculosis sanatoriums. H. 368, proposes an appropriation to the state tuberculosis sanatorium for the construction of a Southwestern Michigan **tuberculosis sanatorium** in the city of Kalamazoo. S. 217, proposes a number of amendments to the **chiropractic act,** the effect of which is to remove the existing limitations that a chiropractor can adjust by hand only. The proposal would permit chiropractors to perform any therapeutic measure included in the curricula of approved chiropractic schools or colleges with the specific exception of drug treatment and surgery wherein tissues are pierced or cut or severed. S. 222, proposes to authorize **non-profit medical care plans** to provide for services furnished by licensed and registered doctors of surgical chiropody. S. 268, proposes the creation of an advisory council to act in an advisory capacity to all state agencies dealing with **problems of the physically handicapped.** S. 269, proposes to require all **hospitals in the state to keep a permanent written case record** of each patient treated therein for at least six years. Such records should show all medical surgical and nursing services rendered, including laboratory and x-ray records, and should not be removed from the hospital except under court order. They could be inspected, however, by the patient's attending physician, executor, administrator or legal guardian or such other person or persons as are authorized by the patient to see such record. They would also be available in case of bona fide medical research work.

Bill Enacted.—S. R. 13, was adopted Feb. 5, 1951. It provides for the appointment of a special committee to study, investigate and report back to the legislature during the 1951 session relating to the feasibility of **disability insurance** for the state of Michigan.

Minnesota

Bills Introduced.—SCR 20, proposes the establishment of an Interim Commission to ascertain study and analyze all facts and matters relating to the **Youth Conservation** and Mental Health Programs of the state. S. 1516, proposes the creation of a commission to examine the existing laws of the state relating to **workmen's compensation** and to prepare, propose and recommend necessary revisions thereof.

Bill Enacted.—S. 780 has become Chapter 406 of the Laws of 1951. It creates an **Interim Commission on Alcoholism** to determine the extent and social impact of alcoholism and the presently available private and public facilities for the treatment of alcoholics in Minnesota.

Missouri

Bill Introduced.—H. 393, proposes to authorize the creation of **departments of health and welfare** in certain counties of the state.

New Jersey

Bills Introduced.—A. 711, proposes the creation of a **State Board of Examiners of Psychologists** and defines a psychologist as a person who (a) renders to individual clients or the general public for fees or personal profit, direct or indirect, any professional service requiring the application of recognized principles, methods and procedures of the science and profession of psychology; such as counseling, interviewing, administration and interpretation of statistically standardized tests of mental abilities and personality characteristics, for the purpose of psychological appraisal for the betterment of human welfare; or (b) for fees or personal profit, direct or indirect, applies such psychological techniques for purposes of re-education, guidance or readjustment. Nothing in the proposal would be construed as permitting the licencee to practice medicine nor to use psychotherapy on nervous and mental patients without the collaboration of a properly qualified doctor of medicine. The proposal would also cover the licensing of psychological technicians. S. 304, proposes the creation of a **State college of medicine,** dentistry and veterinary medicine.

New York

Bills Enacted.—S. 726 has become Chapter 528 of the Laws of 1951. It creates a temporary commission to make a study of existing provisions of law relating to the **control of narcotics** and their use. S. 2138 has become Chapter 662 of the Laws of 1951. It provides regulations for the discovery and treatment of persons suffering from **tuberculosis.**

North Carolina

Bill Enacted.—S. 304 was ratified April 11, 1951. It provides regulations whereby any person who may otherwise validly make a will may, by will, **dispose of the whole or any part of his or her body** to a teaching institution, university, college, State Department of Health, legally licensed hospital or any other legally licensed hospital, agency or commission operating an eye bank, bone or cartilage bank, a blood bank or any other bank of a similar nature and kind designated for the rehabilitation of the maimed.

Ohio

Bill Introduced.—S. 299, proposes to make it unlawful to sell, barter, give or exchange **narcotic drugs** to any minor under the age of twenty-one years, except a physician or dentist in the regular course of his practice or a parent or guardian on order of a physician.

Oklahoma

Bills Introduced.—H. 511, proposes regulations for the creation of **County Boards of Health.** S. 211, proposes regulations creating a **Mental Health Board** and sets forth the duties of such Board.

Bill Enacted.—H. 198, was approved April 3, 1951. It authorizes the Boards of Chiropody, Chiropractic Examiners, Medical Examiners, Optometry Examiners and Osteopathic Examiners to make use of the **injunctive process** in enforcing the provisions of their respective acts, provided, however, that none of such boards may be permitted to institute an action to enjoin any person who holds a valid license issued by any other of the above-named boards without first obtaining the written consent of such other board to file the injunction proceedings.

Oregon

Bill Introduced.—S. 369, proposes to authorize an examination of **hospital records** by any person suffering any injury or his attorney or any party legally liable or against whom a claim shall be asserted for compensation or damages for such injuries.

Bill Enacted.—S. 324 was approved April 10, 1951. It amends the **Medical Practice Act** by, among other things, providing that the one-year internship requirement be eliminated so that if, by reason of the national emergency, any shorter period of internship in a hospital which is approved for internship by the American Medical Association is served and the applicant thereafter completes the one-year period as a resident in such hospital or as a commissioned medical officer of the Armed Forces of the United States, such applicant will be deemed to have fulfilled the internship requirement.

Pennsylvania

Bills Introduced.—H. 989, proposes the creation of a **State Mental Health Authority** and sets forth its powers and dutics. S. 486, proposes to authorize the State Board of Medical Education and Licensure to grant licenses, under certain circumstances, to persons desiring to practice **chiropractic** which is defined to mean a system of locating misaligned or displaced vertebrae of the human spine and the adjustment by hand of such misaligned or displaced vertebrae. S. 488, proposes the establishment of a **State Board of Psychological Examiners** to administer and carry out the provisions of the psychology act. S. 489, proposes the creation of a **State Board of Psychological Examiners** and defines a psychologist as a person who renders to individual clients or to the general public, for fees or personal profit, any professional service requiring the application of recognized principles, methods and procedures of the science and profession of psychology, such as counseling, interviewing, administration and interpretation of standardized tests of mental abilities, aptitudes and personality characteristics for the purpose of psychological classification or evaluation; or, for fees or personal profit, applies such psychological techniques for purposes of re-education guidance or readjustment. Licentiates would not be permitted to practice medicine.

South Carolina

Bill Introduced.—H. 1407, proposes the creation of a South Carolina State **Cancer Nursing Home Board** for the purpose of erecting, equipping, furnishing nursing homes for persons suffering from cancer.

Texas

Bills Introduced.—H.J.R. 38, proposes an amendment to the state constitution which would create a **State Medical Education Board** to make grants, loans and scholarships to students desiring to study medicine. H. 151, proposes the creation of a **State Medical Education Board** to receive and pass upon, allow or disallow all applications for grants, loans and scholarships made by students who are bona fide citizens and residents of the State and who desire to become physicians and are acceptable for enrollment in a qualified four-year medical school. The purpose of such grants is to enable applicants to obtain a medical education which will qualify them to become licensed physicians in Texas.

Vermont

Bill Enacted.—S. 38, was approved April 11, 1951. It requires the **annual renewal of licenses** of practitioners of medicine and surgery and provides for the forfeiture of license of persons who fail to renew their license annually.

Washington

Bill Enacted.—S. 189 has become Chapter 117 of the Laws of 1951. It provides regulations for the licensing and regulating of **nursing homes.**

Wisconsin

Bill Introduced.—S. 701, proposes to authorize the board of examiners in chiropractic to make use of the **injunctive process** to restrain violations of the law.

MEDICAL NEWS

ALABAMA

Dr. Durrett Named Dean.—Dr. James J. Durrett, chief of the Federal Trade Commission's Bureau of Medical Opinions, Washington, D. C., will become the second dean at the Medical College of Alabama between May 15-June 15, succeeding the late Dr. Roy Kracke. During World War I Dr. Durrett was an officer of the U. S. Public Health Service. From 1920-1928 he was professor of public health at the University of Tennessee School of Medicine, serving at the same time as health officer for Memphis. He was director of the Food and Drug Administration's work with purity in drug products for three years, later becoming director of professional relations and chairman of the research committee for E. R. Squibb and Sons. He left Squibb and Sons to join the Federal Trade Commission.

CALIFORNIA

Dr. Giauque to Receive Gibbs Medal.—The 1951 Willard Gibbs Medal of the Chicago Section of the American Chemical Society will be presented to Prof. William Francis Giauque, Ph.D., of the University of California Medical School, Berkeley, at a dinner on May 18. The medalist is renowned for his research at low temperatures, for which he won the Nobel Prize in Chemistry for 1949. The Willard Gibbs Medal Award, founded in 1910 by William A. Converse, secretary of the Chicago Section from 1901 to 1909, is made to "anyone who, because of his eminent work in, and original contributions to, pure and applied chemistry, is deemed worthy of special recognition," and has been bestowed annually with the exception of 1922.

Application for Hospital Funds.—Applications for 1951-1952 funds to help construct hospital and local health facilities will be accepted by the State Department of Public Health until May 31. The staff of the department's bureau of hospitals is available to assist local hospitals and health departments in preparing their applications. Forty-six California construction projects have been sanctioned for financial help since the subsidy program began in July 1947. The federal allocation available during the present fiscal year amounted to $2,905,505 in California. Assistance to voluntary hospitals is limited to a maximum of one-third in federal funds, to be matched by two-thirds in locally subscribed money. Public hospitals may draw one-third from federal and one-third from state "matching funds."

COLORADO

Dr. Meiklejohn to Head Department.—Dr. Gordon Meiklejohn, assistant professor of medicine at the University of California School of Medicine, San Francisco, became professor and head of the department of medicine at the University of Colorado School of Medicine, Denver, April 1. He succeeds Dr. Robert S. Liggett, who resigned as department head to enter private practice but who still serves as clinical professor of medicine. Dr. Meikeljohn has also been associated with the California State Department of Public Health as a research associate and consultant.

CONNECTICUT

Public Health Association.—The annual meeting of the Connecticut Public Health Association will be held May 9 at Yale University School of Medicine, department of public health, New Haven. On the program will be two simultaneous morning sessions and a joint afternoon session.

Yale to Increase Enrolment.—Yale University School of Medicine, New Haven, will increase the number of students admitted next fall from 65 to 80, making it the largest first year class in the history of the 138 year old medical school. The decision to increase the enrolment was in support of the policy of the Association of American Medical Colleges to train more students to meet the nation's need for physicians without decreasing the quality of the education. The total enrolment, including special students at the school of medicine, is already at a record high of 453. The Grace-New Haven Community Hospital, which is affiliated with the school of medicine, will soon complete a new unit which has helped make possible the increased enrolment.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

ILLINOIS

Examinations for Public Health Physicians.—The Illinois Civil Service Commission has announced competitive examinations for Physician I (public welfare), Tuberculosis Control Physician I and Psychiatrist I for employment by the State of Illinois. The final date to apply is June 1. State residence is not necessary. Information may be obtained from the commission at 501 Armory Building, Springfield, Ill.

Public Relations Conference.—The first Illinois "county medical society level" conference on public relations, sponsored by the public relations committee, Adams County Medical Society, will be held at the Lincoln Douglas Hotel in Quincy the evening of May 14. The conference has been arranged for the Sixth Councilor District of the Illinois State Medical Society, but all physicians are invited to attend. The speakers include: John W. Neal, executive secretary; J. C. Leary, Chicago, public relations councilor; Dr. Percy E. Hopkins, Chicago, chairman, public relations committee; Dr. Harold M. Camp, Monmouth, secretary, Illinois State Medical Society, and Leo Brown, assistant to the general manager in charge of public relations, American Medical Association, Chicago.

Chicago

Awards for Hospital Interns.—The board of directors of Mount Sinai Hospital has established two cash awards that will be presented to the interns who make the best case presentation during the year at the regular Friday morning clinical-pathological conferences. The first prize is $100 and the second $50.

The Hektoen Lecture.—Dr. Sheila Sherlock of the Postgraduate Medical School, University of London, England, will deliver the twenty-seventh Ludvig Hektoen Lecture of the Frank Billings Foundation of the Institute of Medicine of Chicago at the Palmer House May 11 at 8 o'clock. Her subject will be "Hepatic Venous Catheterization in Clinical Research."

Training for Civil Defense.—At the request of the Chicago Civil Defense Corps the Chicago Surgical Society has assumed the responsibility for providing instruction for training dentists of the area in the medical and surgical aspects of the defense plan. It has been determined that emergency service will need the aid of 110,000 people trained to care for medical emergencies in the event of an atomic attack. The dentists have been assigned to assist in surgery, working under the direction of the surgeons in strategic locations. The Chicago Dental Society and the committe of the Chicago Surgical Society has made up the program.

KANSAS

State Approves Fluoridation of Water.—The Kansas State Board of Health now recommends for the partial protection of children's teeth from dental caries the addition of fluoride to the public water supplies for Kansas communities where the supply is deficient in fluoride and where local dental and medical professions approve the program and communities can meet and maintain the standards required by the State Board of Health. After cities have decided for themselves that they want their water treated, the Division of Sanitation of the Kansas State Board of Health will assist in setting up regulations and requirements assuring that waterworks will supply safe water.

State Medical Society Meeting.—The Kansas Medical Society will hold its annual meeting in Topeka May 14-17 under the presidency of Dr. F. Roy Croson of Clay Center. Guest speakers at the general sessions will be:

John H. Moore, Grand Forks, N. D., Office Gynecology.
William J. Engel, Cleveland, One-Stage Suprapubic Prostatectomy.
Thomas F. Frawley, Boston, ACTH and Cortisone in General Practice.
Ethan A. Brown, Boston, The Field of Allergy.
Stuart C. Cullen, Iowa City, Use of Depressant Drugs in Premedication and in the Postoperative Period.
Robert L. Jackson, Iowa City, Infant Feeding.
N. Frederick Hicken, Salt Lake City, Management of Intestinal Obstructions.
John R. Schenken, Omaha, Essential Thrombocytopenic Purpura.
Clyde L. Randall, Buffalo, Prevention of Abortion.
Charles H. Burnett, Dallas, Texas, Current Concepts of the Mechanisms and Management of Edema.
Robert A. Kehoe, Cincinnati, Industrial Medicine and the General Practitioner.

Drs. Tullos O. Coston, Oklahoma City, and Albert C. Stutsman, St. Louis, will be guest speakers for the eye, ear, nose and throat section. Roundtable luncheons will be held Tuesday and Wednesday with panels of guest speakers at a question and answer period. The annual banquet will take place at 7 p. m. Wednesday. The Woman's Auxiliary will meet in conjunction with the association, as will the Kansas Medical Assistant's Society. The eye, ear, nose and throat section meeting will be held on Tuesday and Wednesday. Technical exhibits will be shown.

MICHIGAN

Foundation Begins Community Studies.—With a grant to Michigan State College at East Lansing, the Health Information Foundation is launching a series of community studies through which a pattern for community self study of health services is to be developed. The study grant of $28,000, made to Michigan state's Social Research Service, will begin with an invitation to a Midwestern community to study its own health situation. The college has contributed $8,350. By December 31 it is expected that the fact finding phase will be completed, and action to improve health deficiencies will be under way. During the succeeding two years the research group will make follow-up visits to check results in health betterment. Questions on which the project is expected to throw light include: What type of community leaders can best initiate a health program? What methods can a community use to secure facts about its health situation? What pitfalls should be avoided? Chairman of the foundation's advisory committee is Dr. John B. Pastore, executive director, Hospital Council of Greater New York.

MISSISSIPPI

Society News.—The semiannual meeting of the Delta Medical Society was held in Greenwood April 11. The guest speaker was Dr. Robert C. Lynch of New Orleans, who spoke on "Abdominal Wounds."

Narcotic Violation.—Dr. Fred Lee Ricks of Drew pleaded no contest in the District Court at Oxford to a criminal information filed charging violation of the federal narcotic law. On February 28 the imposition of sentence was suspended, and he was placed on probation for a period of five years.

Heart Disease Control Program.—The heart committee appointed by Dr. Billy S. Guyton, Oxford, president of the Mississippi Medical Association met in Jackson in November with Dr. Archie L. Gray, Jackson, presiding. A program was outlined, which is being carried out under the auspices of the committee and the State Board of Health. Dr. Thaddeus D. Labecki, Jackson, is medical consultant to the unit. Of the phases suggested by the heart committee of the state medical association the following are now being exercised: (1) cardiovascular consultations are being rendered to the physicians in the rural areas wherever such consultations are not readily available; the request for such service must come either from individual physicians or from local hospital staffs or county medical societies; (2) a lay education program which at present is being limited to high school and junior colleges; (3) postgraduate cardiovascular seminars are being planned for the middle of June in Jackson, Gulfport and one or two other towns; participation of excellent speakers from two medical schools has been assured, and (4), a study of x-ray films taken during the tuberculosis survey is nearing completion, and the results obtained will govern the attitude to this approach as a case finding method.

MONTANA

Personals.—Dr. Gay F. Tidyman of Joliet has been appointed surgeon general of the national department of the U. S. Spanish-American War Veterans. Dr. Tidyman has practiced medicine in Montana for more than 50 years and is a charter member of the state medical association's "50 Year Club." ——Dr. Amos R. Little Jr., Helena, has been named as a delegate of the Northern Rocky Mountain Ski Association to the coming meeting of the National Ski Association.

Spring Clinic at Billings.—The Yellowstone Valley Medical Society will hold its annual Spring Clinic at Billings May 28-29. The speakers on the program are: Drs. Eugene A. Edwards, Chicago; John H. Fitzgibbon, Portland, Ore.; N. Frederick Hicken, Salt Lake City; Mr. Norman J. Holter, Helena; Drs. Manuel E. Lichtenstein, Chicago; Harold D. Palmer, Denver, and Frederick E. Templeton, Seattle. Reservations for lodging should be addressed to Dr. Edward W. Gibbs, Billings Clinic, Billings.

NEBRASKA

A Memorial Instead of a Celebration.—Howells, Neb., was all ready to turn out April 5 for a big celebration in honor of Dr. Henry D. Myers Sr., who for 45 years had practiced in that community. Speeches were written, programs printed, flowers ordered, guests invited, food purchased and place cards prepared. Then, four days before the event Dr. Myers suffered a cerebral hemorrhage, and on the day before the celebration he passed away. The special anniversary number prepared by the *Howells Journal* became a memorial instead.

NEW YORK

Portrait of Dr. Whipple.—On February 25 at an informal tea in the board room of the Rochester Academy of Medicine a portrait of Dr. George H. Whipple, dean of the University of Rochester School of Medicine and Dentistry, was presented to the academy as a gift of its past presidents.

Dr. Wade Named Esso Medical Director.—Dr. Leo J. Wade has been appointed medical director of Esso Standard Oil Company, succeeding Dr. McIver Woody, who has retired after almost 30 years with the company and affiliates. Dr. Wade formerly held assistant professorships in medicine and preventive medicine and public health at Washington University School of Medicine, St. Louis, and was a lecturer in public health at the George Warren Brown School of Social Work at Washington University. He joined Standard Oil Company (New Jersey) as assistant internist in 1949 and was made assistant medical director of Esso Standard the following year.

Postgraduate Instruction.—The following postgraduate lectures have been arranged by the Medical Society of the State of New York in cooperation with the New York State Department of Health. Dr. Jack Wolf, New York, will address the staff of St. Joseph's Hospital in Yonkers May 9 on "Diagnosis and Treatment of Cutaneous Cancer and Precancerous Lesions" at 9 p. m. at the hospital. On June 13 Dr. Cranston W. Holman, New York, will speak to the staff on "Tumors of the Lung and Mediastinum." On May 15 the Jefferson County medical and dental societies will hear Harold A. Solomon, D.D.S., Buffalo, speak on "Diseases of the Soft Tissues of the Mouth" at a dinner meeting at 6:30 p. m. in the Black River Valley Club in Watertown. The Utica Academy of Medicine will hear a lecture on "The Management of the Surgical Diabetic" at its meeting at 8 p. m. May 17 at the Hotel Utica in Utica. Dr. Frederick W. Williams, New York, will deliver the lecture.

New York City

Ninth Harvey Lecture.—Elvin A. Kabat, Ph.D., associate professor of bacteriology, College of Physicians and Surgeons, Columbia University, will deliver the ninth Harvey Lecture of the current series at the New York Academy of Medicine on May 17 on "Immunochemistry of the Blood Group Substances."

Memorial Journal to Dr. Berg.—The *Journal of the Mount Sinai Hospital* for March-April is dedicated to the memory of Dr. Albert A. Berg, who was a member of the hospital's surgical staff from 1899 until his retirement in 1934, when he became consulting surgeon. He died July 1, 1950. In addition to a memorial to Dr. Berg, the volume contains 87 scientific articles.

Professor of Neurosurgery.—Dr. Isadore M. Tarlov has been appointed professor of neurosurgery and neurology and director of the department of neurology and neurosurgery at New York Medical College, Flower-Fifth Avenue Hospitals. During World War II Dr. Tarlov engaged in research on the development of a method of repairing nerves by using blood plasma clot as an adhesive rather than by the customary method of sewing.

Venereal Disease Clinic Closed.—The Central Social Hygiene Clinic, oldest and largest of the 15 venereal disease clinics operated by the city department of health, was permanently closed March 31 because of a steady decline in the city's venereal disease case load. The clinic at 125 Worth Street, opened in 1917, during the past 34 years has treated more than 250,000 patients. The number of reported cases of venereal diseases in New York City reached a high point in 1946, when 13,401 cases of infectious syphilis and 24,350 cases of gonorrhea were reported to the department. Last year 5,385 cases of infectious syphilis and 16,784 cases of gonorrhea were reported. That is a decline of 59.8 per cent in infectious syphilis and of 31.1 per cent in gonorrhea.

Personals.—Dr. Reginald M. Atwater, executive secretary of the American Public Health Association, was made an honorary fellow of the Society of Medical Officers of Health in Great Britain on March 2 at a luncheon in the Statler Hotel. ——Dr. Carl Muschenheim, attending physician, New York Hospital, and associate professor of clinical medicine, Cornell University Medical College, has accepted the chairmanship of the Tuberculosis Committee of the New York Tuberculosis and Health Association.——Dr. John Jewell has been appointed medical director of Ayerst, McKenna & Harrison Limited, New York. Formerly medical director of the Canadian division of the firm, Dr. Jewell is now in charge of medical services for both United States and Canada.——Dr. Oswald S. Lowsley returned in March from a six weeks' lecture tour of Venezuela, Colombia, Panama and Central American countries.

OHIO

State Radiologists Meeting.—The Ohio State Radiological Society will hold its annual meeting at the Fort Hayes Hotel, Columbus, May 25-27. The scientific program will begin May 26, and on May 27 panels and discussions on therapy will be held.

Akron Doctors' Orchestra.—The Doctors' Orchestra of Akron, under the direction of Dr. Alexander S. McCormick, will present a program at the Congress Lake Club in Hartville May 21 at 3:30 p. m. This is its second spring program, the orchestra having given a benefit concert for the Salvation Army March 8.

Postgraduate Lectures in Toledo.—Dr. William K. Boyd, Toronto, Canada, will conduct a lecture series in Toledo at the Nurses' Home of St. Vincent's Hospital May 10 and 11. Topics which Dr. Boyd will discuss are the collagen diseases, tumors of the neck, bronchogenic carcinoma, nephritis, hepatitis and cirrhosis and renal anoxia. This lecture series is presented by the Medical Advancement Trust of Maumee Valley Hospital in Toledo. All physicians are welcome. There is no fee.

PENNSYLVANIA

Hospital Seminar.—The Association of Residents and Ex-Residents of Allentown Hospital has invited the members of the Northampton County Medical Association to attend its annual seminar May 10 at the hospital. Members of the Irving Wright Clinic of the Cornell Medical Center will present papers on peripheral vascular disease. Speakers will be Drs. Grafton E. Burke, Jere W. Lord Jr. and Donald A. Covalt, all of New York.

Society News.—The Pennsylvania Academy of General Practice will hold its annual convention May 25-27 at the Bedford Springs Hotel in Bedford.——The Pennsylvania Radiological Society will hold its annual meeting in Pittsburgh May 18-20. Much of the program will be devoted to discussion of the clinical use of radioactive isotopes. This thirty-sixth annual session of the state organization will be held at the William Penn Hotel. Dr. Edgar C. Baker, Youngstown, Ohio, is president and Dr. James M. Converse, Williamsport, secretary-treasurer.

Pittsburgh

Mellon Lecture.—The Mellon Lecture will be given by Dr. Robert A. Moore, professor of pathology and dean of the school of medicine of Washington University, St. Louis, on "The Nature of Teratomatous Tumors" at 8:30 p. m. May 9 in the auditorium of Mellon Institute. The Mellon Lectures are sponsored by the Society for Biological Research of the University of Pittsburgh School of Medicine. Members of the medical profession are cordially invited to attend.

TEXAS

Grants for Research.—Recent gifts to the University of Texas Medical Branch, Galveston, for the support of research include $3,000 from the Smith, Kline and French Laboratories, Philadelphia, for research under the direction of Dr. Clarence S. Livingood, professor of dermatology and syphilology; $6,600 from the W. K. Kellogg Foundation for participation in a curriculum planning program for nurses at the University of Chicago; $1,300 from the American Heart Association, New York, for the support of research under the direction of Charles E. Hall, Ph.D., of the department of physiology, and $1,800 from the American Cancer Society for the support of research under the direction of Charles M. Pomerat, Ph.D., director of the Tissue Culture Laboratory.

WEST VIRGINIA

Society News.—At a meeting of the West Virginia Society of Anesthesiologists at the Stonewall Jackson Hotel in Clarksburg May 6 Dr. Donald H. Stubbs of Washington, D. C., will present a paper on "Anesthesia for Part-Time Anesthetists." ——The annual tri-county medical meeting, sponsored by the medical societies in Monongalia, Marion and Taylor counties, will be held at the Fairmont Field Club in Fairmont May 24 beginning at 2 p. m. There will be a symposium on rheumatic fever, the guest speakers being Drs. John W. Martin and A. Carlton Ernstene, both of Cleveland; Dr. Charles P. Bailey, Philadelphia, and Dr. Leo M. Taran, New York. A forum discussion will follow the dinner. Physicians are invited.

Graduate Education Program in Charleston.—The second of a series of three one-day meetings on graduate education will be held at the Daniel Boone Hotel in Charleston May 16, sponsored by the West Virginia University Schol of Medicine and the State Medical Association's committee on medical education. A symposium on diseases of the kidney will be presented. The preclinical part of the program will be given by members of the faculty of West Virginia University School of Medicine, the clinical part by out-of-state speakers. These will be:

J. Murray Kinsman, Louisville, Relation of the Kidney to Hypertension.
Isidore Snapper, New York, Diagnosis of Acute Renal Insufficiency, and Diagnosis and Treatment of Chronic Nephritis.
Thaddeus S. Danowski, Pittsburgh, Newer Concepts of Electrolyte Balance.
George E. Wakerlin, Chicago, Significance of Albuninuria, and Methods of Diagnosis and Treatment of Uremia.

The meeting is scheduled to adjourn not later than 5 p. m.

WYOMING

Cancer Symposium.—A cancer symposium will be held in Rawlins May 20 for physicians and dentists throughout the state under the sponsorship of the Wyoming Division, American Cancer Society, in cooperation with the Wyoming State Medical Society and the State Department of Health. The program is as follows:

Lou P. Matthei, Ogden, Utah, Cancer and Atomic Energy.
William H. Moretz, Salt Lake City, Cancer of the Skin.
N. Frederick Hicken, Salt Lake City, Cancer of the Breast.
Round Table Discussion: Common Errors in Cancer Diagnosis, Lou Matthei, moderator.
Ernest J. Eichwald, Salt Lake City, What's New in Cancer Research?
E. Stewart Taylor, Denver, Cancer of the Uterus.
William H. Moretz, Salt Lake City, Cancer of the Oral Cavity.
Round Table Discussion: Common Errors in Cancer Therapy, Ernest Eichwald, moderator.

HAWAII

Territorial Medical Meeting.—The Hawaii Territorial Medical Association holds its annual meeting at the Mabel Smyth Building in Honolulu May 3-6 under the presidency of Dr. Rogers Lee Hill, Honolulu. Visiting speakers were:

Nicholson J. Eastman, Baltimore, Obstetrical Hemorrhage.
Herbert F. Traut, San Francisco, Cytological Diagnosis in Obstetrics and Gynecology.

A symposium on ACTH and Cortisone was given Friday. The annual cocktail dinner dance will be held Saturday at the Oahu Country Club. The woman's auxiliary to the association met Friday morning.

GENERAL

Special Society Elections.—The American Surgical Association at its recent meeting in Washington elected Dr. Daniel C. Elkin, Atlanta, president; Drs. Owen H. Wangensteen, Minneapolis, and James F. Mitchell, Washington, D. C., first and second vice presidents respectively; Dr. Nathan A. Womack, Iowa City, secretary, and Dr. B. Noland Carter, Cincinnati, treasurer.

American Goiter Association.—This association will hold its annual meeting at the Deshler-Wallick Hotel in Columbus, Ohio, May 24-26 under the presidency of Dr. Thomas C. Davison of Atlanta. The program includes symposiums on iodine metabolism, diagnosis and medical treatment of toxic goiter, thyroiditis, surgical aspects of goiter and thyroid tumors. The annual banquet will be held Friday evening.

Studies in Multiple Sclerosis.—A grant has recently been made by the National Multiple Sclerosis Society to the H. L. Snyder Memorial Research Foundation, Winfield, Kan., for biochemical studies in multiple sclerosis in the amount of $15,507 for one year. Dr. Harold H. Jones, director and vice president of the foundation, will serve as director of research for the project. The biochemical studies to be made are those involving blood and urine.

International Congress of Physical Medicine.—The organization of this international congress, to be held in London April 14-19, 1952, is being undertaken by the British Board of Management of the International Federation of Physical Medicine. Meetings of the congress will be reserved for matters dealing with the clinical, remedial and prophylactic methods employed in physical medicine and rehabilitation. The congress will be under the presidency of Lord Horder; the secretary is Dr. A. C. Boyle, 45, Lincoln's Inn Fields, London, W.C.2.

American Psychiatric Association.—This association will meet in Cincinnati May 7-11 at the Netherland Plaza, Gibson and Sinton hotels under the presidency of Dr. John C. Whitehorn, Baltimore. The program has been arranged by sections before which a total of 118 papers will be read. Papers on psychoanalysis, hospital psychiatry, private practice, teaching concepts, treatments of various mental disorders, legal psychiatry, social work, group psychotherapy and military psychiatry and other subjects will be read. Roundtable meetings will be held on Tuesday and Thursday beginning at 7 p. m. A public meeting on mental health will be held Monday evening in the Tuft Auditorium at 8 p. m. Mr. Oren Root, president of the National Association for Mental Health, will speak on "Mental Health—Layman's View." The annual dinner will be held at the Netherland Plaza Wednesday evening. Scientific and technical exhibits will be on display. A registration fee of $5 will be charged all nonmembers.

Fifth International Orthopaedic Congress.—This congress of the Société Internationale de Chirurgie Orthopédique et de Traumatologie will be held in Stockholm, Sweden, at the Concert Hall May 21-25, under the patronage of the king and queen of Sweden. Sir Henry Platt, Manchester, England, is president. About 90 papers will be read, 10 on avitaminosis and osteopathy, 30 on low back pain and sciatica—results and treatment, about 20 on hip surgery, 10 on traumatology and the rest on general orthopedic subjects. Fees for members is Sw. crs 100.—; for nonmembers Sw. crs 35.—. The American Express Company is the official travel agency for the congress.

Tuberculosis Society.—The National Tuberculosis Association, American Trudeau Society and the National Conference of Tuberculosis Secretaries will hold joint annual meetings with the Ohio Tuberculosis and Health Association, which is celebrating its 50th anniversary at the Netherland Plaza Hotel in Cincinnati May 14-18. The medical section will open with a symposium on Cortisone and ACTH, with Dr. Eugene B. Ferris, Cincinnati, serving as chairman. On Friday afternoon the medical section will hold a panel discussion on Nontuberculous Diseases of the Chest and Related Matters, with Dr. Robert A. Kehoe, Cincinnati, serving as chairman. At the general meeting on Wednesday at 8:30 p. m. the Trudeau Medal will be presented to Dr. Florence R. Sabin, Denver.

Pan American Congress on Medical Education.—This congress will take place in Lima, Peru, May 14-18 as part of the program commemorating the Fourth Centenary of the University of San Marcos. Delegates appointed by universities, medical schools, faculties or other medical institutions of the Americas and Europe are invited. In the sessions on scientific works papers will be presented on "Medical Education and Its Tendencies at the Present Time," "Necessary Characteristics of Premedical Education," "The Medical Curriculum" and "Educational Exchange Among the Schools of Medicine in America." Papers will be discussed at roundtable sessions. Further information may be obtained from the office of the secretary, First Pan American Congress on Medical Education, Faculty of Medicine, Lima, Peru.

A Diabetes Kit.—A kit of teaching material, including 11 film strips and sound recordings, has been released by the diabetes branch of the U. S. Public Health Service for instruction of diabetic patients and their families. It was prepared in conjunction with the American Diabetes and the American Dietetic associations to develop knowledge, skills and favorable attitudes of the diabetic patients. This kit of audi-visual aids was especially designed for group teaching in the physician's office, the hospital and the community health agency. In addition to the film strip and recordings the kit contains wall charts, an instructor's guide, a diebetes guide book and a booklet outlining diet plans for the patient. A 33 mm. film strip projector and a 33½ r.p.m. record player are required for showing these materials. Physicians may secure the kit for review prior to purchase through arrangements with the American Diabetes Association, 11 West 42nd Street, New York 17; American Dietetic Association, 620 North Michigan Avenue, Chicago 11, and the American Nurses Association, 1790 Broadway, New York 19. One kit has been deposited with the Committee on Medical Motion Pictures, American Medical Association, 535 N. Dearborn, Chicago, and may be borrowed for preview purposes only. Kits may be purchased from Health Publications Institute, Inc., 216 North Dawson street, Raleigh, N. C., licensee of the U. S. Public Health Service, for $49.80. Individual film strips and records may be ordered separately.

CORRECTION

State Medical Meeting at Kansas City.—Dr. William A. Bloom of Fayette, Mo., was president of the Missouri State Medical Association at the time of its annual meeting in Kansas City, April 22-25, not Dr. Billy S. Guyton, Oxford, Miss., who is president of the Mississippi State Medical Association.

MEETINGS

AMERICAN MEDICAL ASSOCIATION, Atlantic City, June 11 to 15. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

AERO MEDICAL ASSOCIATION, Denver, Colo., May 14-16. Dr. Thomas H. Sutherland, 214 S. State St., Marion, Ohio, Secretary.

ALASKA TERRITORIAL MEDICAL ASSOCIATION, Ketchikan, May 31-June 2. Dr. William P. Blanton, Box 2569, Juneau, Secretary.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS, Skytop Lodge, Skytop, Pa., May 16-18. Dr. Norris J. Heckel, 122 S. Michigan Ave., Chicago 3, Secretary.

AMERICAN ASSOCIATION ON MENTAL DEFICIENCY, Hotel New Yorker, New York, May 21-26. Dr. Neil A. Dayton, P. O. Box 96, Willimantic, Conn., Secretary.

AMERICAN BRONCHO-ESOPHAGOLOGICAL ASSOCIATION, Hotel Claridge, Atlantic City, May 7-8. Dr. Edwin N. Broyles, 1100 N. Charles St., Baltimore 1, Secretary.

AMERICAN COLLEGE OF CHEST PHYSICIANS, Atlantic City, June 7-10. Mr. Murray Kornfeld, 500 N. Dearborn St., Chicago 10, Executive Secretary.

AMERICAN COLLEGE OF RADIOLOGY, Atlantic City, June 10. Mr. W. C. Stronach, 20 N. Wacker Drive, Chicago 6, Executive Secretary.

AMERICAN DERMATOLOGICAL ASSOCIATION, The Homestead, Hot Springs, Va., May 23-26. Dr. Louis A. Brunsting, 102 Second Ave., S. W., Rochester, Minn., Secretary.

AMERICAN DIABETES ASSOCIATION, Chalfonte-Haddon Hall, Atlantic City, June 9-10. Dr. John A. Reed, 11 W. 42d St., New York 18, Secretary.

AMERICAN ELECTROENCEPHALOGRAPHIC SOCIETY, Hotel Claridge, Atlantic City, June 16-17. Dr. John A. Abbott, Massachusetts General Hospital, Boston 14, Secretary.

AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION, Atlantic City, June 8-9. Dr. Dwight L. Wilbur, 655 Sutter St., San Francisco 2, Secretary.

AMERICAN GERIATRICS SOCIETY, Hotel Brighton, Atlantic City, June 7-9. Dr. Malford W. Thewlis, 25 Mechanic St., Wakefield, R. I., Secretary.

AMERICAN GOITER ASSOCIATION, Deshler-Wallick Hotel, Columbus, Ohio, May 24-26. Dr. George C. Shivers, 100 E. St. Vrain St., Colorado Springs, Colo., Secretary.

AMERICAN GYNECOLOGICAL SOCIETY, Waldorf-Astoria Hotel, New York, May 7-9. Dr. Norman F. Miller, 1313 E. Ann St., Ann Arbor, Mich., Secretary.

AMERICAN LARYNGOLOGICAL ASSOCIATION, Hotel Claridge, Atlantic City, May 9-10. Dr. Louis H. Clerf, 1530 Locust St., Philadelphia 2, Secretary.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, Hotel Claridge, Atlantic City, May 6-8. Dr. C. Stewart Nash, 277 Alexander St., Rochester 7, N. Y., Secretary.

AMERICAN NEUROLOGICAL ASSOCIATION, Atlantic City, June 18-20. Dr. H. Houston Merritt, 710 W. 168th St., New York 32, Secretary.

AMERICAN OPHTHALMOLOGICAL SOCIETY, The Greenbrier, White Sulphur Springs, W. Va., June 7-9. Dr. Maynard C. Wheeler, 30 W. 59th St., New York 19, Secretary.

AMERICAN ORTHOPEDIC ASSOCIATION, The Greenbrier, White Sulphur Springs, W. Va., June 20-23. Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secretary.

AMERICAN OTOLOGICAL SOCIETY, Hotel Claridge, Atlantic City, May 11-12. Dr. John Lindsay, 950 E. 59th St., Chicago 37, Secretary.

AMERICAN PROCTOLOGIC SOCIETY, Atlantic City, June 7-10. Dr. W. Wendell Green, 1838 Parkwood Ave., Toledo 2, Ohio, Secretary.

AMERICAN PSYCHIATRIC ASSOCIATION, Cincinnati, May 7-11. Dr. R. Finley Gayle Jr., 501 E. Franklin St., Richmond 19, Va., Secretary.

AMERICAN RADIUM SOCIETY, Atlantic City, June 6-9. Dr. John Wirth, U. S. Marine Hospital, Baltimore, Secretary.

AMERICAN RHEUMATISM ASSOCIATION, Hotel Dennis, Atlantic City, June 8-9. Dr. Charles Ragan, 620 W. 168th St., New York 32, Secretary.

AMERICAN SOCIETY FOR THE STUDY OF STERILITY, Ritz-Carlton Hotel, Atlantic City, June 9-10. Dr. John O. Haman, 490 Post St., San Francisco 2, Secretary.

AMERICAN THERAPEUTIC SOCIETY, Atlantic City, June 8-10. Dr. Oscar B. Hunter, 915 Nineteenth St. N.W., Washington 6, D. C., Secretary.

AMERICAN UROLOGICAL ASSOCIATION, Palmer House, Chicago, May 21-24. Dr. Charles H. deT. Shivers, Boardwalk National Arcade Bldg., Atlantic City, N. J., Secretary.

ASSOCIATION FOR THE STUDY OF INTERNAL SECRETIONS, Chalfonte-Haddon Hall, Atlantic City, June 7-9. Dr. Henry H. Turner, 1200 N. Walker St., Oklahoma City 3, Secretary.

CALIFORNIA MEDICAL ASSOCIATION, Hotel Biltmore, Los Angeles, May 13-16. Dr. Albert C. Daniels, 450 Sutter St., San Francisco 8, Secretary.

CATHOLIC HOSPITAL ASSOCIATION OF THE UNITED STATES AND CANADA, Convention Hall, Philadelphia, June 2-5. Mr. M. R. Kneifl, 1402 S. Grand Blvd., St. Louis 4, Executive Secretary.

CONFERENCE OF PRESIDENTS AND OTHER OFFICERS OF STATE MEDICAL ASSOCIATIONS, Hotel Traymore, Atlantic City, June 10. Mr. John E. Farrel, 106 Francis St., Providence 3, R. I., Secretary.

GREAT FALLS MEDICAL-SURGICAL CONFERENCE, Great Falls, Montana, June 25-26. Dr. William E. Sullens, Box 1066, Great Falls, Chairman.

IDAHO STATE MEDICAL ASSOCIATION, Sun Valley, June 17-20. Dr. Robert S. McKean, 305 Sun Building, Boise, Secretary.

ILLINOIS STATE MEDICAL SOCIETY, Hotel Sherman, Chicago, May 22-24. Dr. Harold M. Camp, 224 S. Main St., Monmouth, Secretary.

KANSAS MEDICAL SOCIETY, Topeka, May 14-17. Dr. D. D. Vermillion, 512 New England Bldg., Topeka, Secretary.

LOUISIANA STATE MEDICAL SOCIETY, New Orleans, May 7-9. Dr. C. Grenes Cole, 1430 Tulane Ave., New Orleans 12, Secretary.

MAINE MEDICAL ASSOCIATION, Poland Spring House, Poland Spring, June 17-19. Dr. Frederick R. Carter, 142 High St., Portland 3, Secretary.

MASSACHUSETTS MEDICAL SOCIETY, Hotel Statler, Boston, May 22-24. Dr. H. Quimby Gallupe, 8 Fenway, Boston 15. Secretary.

MEDICAL LIBRARY ASSOCIATION, Denver, June 28-30. Miss Caroline Riechers, Rush Medical College Library, 1758 W. Harrison St., Chicago 12, Secretary.

MISSISSIPPI STATE MEDICAL ASSOCIATION, Biloxi, May 15-17. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

NATIONAL TUBERCULOSIS ASSOCIATION, Cincinnati, Ohio, May 14-18. Dr. James E. Perkins, 1790 Broadway, New York 19, Managing Director.

NEW JERSEY, MEDICAL SOCIETY OF, Haddon Hall, Atlantic City, May 14-17. Dr. Marcus H. Greifinger, 315 W. State St., Trenton 8, Secretary.

NORTH CAROLINA, MEDICAL SOCIETY OF THE STATE OF, The Carolina, Pinehurst, May 7-9. Dr. Millard D. Hill, 203 Capitol Club Bldg., Raleigh, Secretary.

NORTH DAKOTA STATE MEDICAL ASSOCIATION, Bismarck, May 19-22. Dr. O. A. Sedlak, 702 First Ave. S., Fargo, Secretary.

OKLAHOMA STATE MEDICAL ASSOCIATION, Mayo Hotel, Tulsa, May 21-23. Mr. R. H. Graham, 1227 Classen St., Oklahoma City, Executive Secretary.

RHODE ISLAND MEDICAL SOCIETY, Providence, May 9-10. Dr. Morgan Cutts, 106 Francis St., Providence 3, Secretary.

SECTIONAL MEETING, AMERICAN COLLEGE OF SURGEONS:

Detroit, Mich., Book-Cadillac Hotel, May 9-11. Dr. Eugene A. Osius. 1553 Woodward Ave., Detroit 26, Chairman.

SOCIETY FOR INVESTIGATIVE DERMATOLOGY, Ritz-Carlton Hotel, Atlantic City, June 7-8. Dr. Herman Beerman, 255 S. 17th St., Philadelphia, Secretary.

SOCIETY OF AMERICAN BACTERIOLOGISTS, Chicago, May 28-June 1. Dr. John E. Blair, 1919 Madison Ave., New York 35, Secretary.

SOCIETY OF BIOLOGICAL PSYCHIATRY, Claridge Hotel, Atlantic City, June 17. Dr. George N. Thompson, 1136 W. Sixth St., Los Angeles 17, Secretary.

SOUTH CAROLINA MEDICAL ASSOCIATION, Ocean Forest Hotel, Myrtle Beach, May 15-17. Dr. N. B. Heyward, 105 W. Cheves St., Florence, Secretary.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION, Aberdeen, June 2-6. Dr. Roland G. Mayer, 22½ S. Main St., Aberdeen, Secretary.

INTERNATIONAL

EUROPEAN CONGRESS ON RHEUMATISM, Barcelona, Spain, Sept. 24-27. Dr. Gunnar Edström, Lund, Sweden, Secretary.

INTERNATIONAL ACADEMY OF PROCTOLOGY, Atlantic City, N. J., U. S. A., June 14-15. Dr. Alfred J. Cantor, 43-45 Kissena Blvd., Flushing, New York, Secretary.

INTERNATIONAL ANESTHESIA RESEARCH SOCIETY, London, England, Sept. 3-7. Mr. R. W. Cope, University College Hospital, London W.C.1, England.

INTERNATIONAL ASSOCIATION OF ALLERGISTS, Zurich, Switzerland, Sept. 23-29. Prof. A. S. Grumbach, Hygiene Institut der Universitaet Zurich, Gloriastr. 32, Zurich, Switzerland.

INTERNATIONAL CONGRESS OF ANESTHESIOLOGY, Nursing School of the Salpiettre, 47 Boul de l'Hospital, Paris, France, Sept. 20-22. 12 rue de Seine, Paris 6°, France, Secretariat.

INTERNATIONAL CONGRESS OF CLINICAL PATHOLOGY, London, England, July 16-20. Dr. W. H. McMenemey, Maida Vale Hospital for Nervous Diseases, London W.9, England, Secretary.

INTERNATIONAL CONGRESS OF GYNECOLOGY, Maison de la Chimie, Centre Marcellin, Paris, France, June 23-29. Dr. Maurice Fabre, 1, rue Jules-Lefebvre, Paris IX, General Secretary.

INTERNATIONAL CONGRESS ON MENTAL HEALTH, Mexico City, Mexico, Dec. 11-19.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, Paris, France, June 17-23. Physician General Dutrey, 8, bis, rue de Recollets, Paris X, Secretary General.

INTERNATIONAL CONGRESS OF ORTHOPEDIC SURGERY AND TRAUMATOLOGY, Stockholm, Sweden, May 21-25. Dr. Anders Karlen, Karolinska Instituts Ortopediska Klinik, Stockholm, Secretary.

INTERNATIONAL EXHIBITION OF MEDICAL ARTS, Turin, Italy, May 30-June 12. Prof. S. Teneff, Palazzo della Esposizioni al Valentino, Turino, Italy.

INTERNATIONAL GERONTOLOGICAL CONGRESS, Hotel Jefferson, St. Louis, Mo., U. S. A., Sept. 9-14. Dr. John E. Kirk, 5600 Arsenal Street, St. Louis 9, Mo., Chairman, Program Committee.

INTERNATIONAL HOSPITAL CONGRESS, Brussels, Belgium, July 15-21. Capt. J. E. Stone, 10 Old Jewry, London E.C., England, Secretary.

INTERNATIONAL POLIOMYELITIS CONGRESS, Copenhagen, Denmark, Sept. 3-7. Prof. Dr. Niels Bohr, Statens Seruminstitut, 80 Amager Blvd., Copenhagen S., Denmark, President.

INTERNATIONAL SOCIETY OF ANGIOLOGY, Claridge Hotel, Atlantic City, N. J., U. S. A., June 9. Dr. Henry Haimovici, 105 E. 90th St., New York 28, Secretary.

INTERNATIONAL SOCIETY OF SURGERY, Paris, France, Sept. 24-29. Dr. L. Dejardin, 141, rue Belliard, Brussels, Belgium, Secretary General.

INTERNATIONAL SOCIETY FOR THE WELFARE OF CRIPPLES, Fifth World Congress, Stockholm, Sweden, Sept. 9-14. Mr. Donald V. Wilson, 54 E. 64th St., New York 21, N. Y., U. S. A., Executive Director.

PAN AMERICAN CONGRESS ON MEDICAL EDUCATION, Lima, Peru, May 14-18. Dr. Carlos F. Krumdieck, Washington 914, Lima, Secretary General.

PAN PACIFIC SURGICAL ASSOCIATION CONGRESS, Honolulu, Hawaii, Nov. 10-21. Dr. Forrest J. Pinkerton, Suite 7, Young Bldg., Honolulu, Hawaii, President.

WORLD CONFEDERATION FOR PHYSICIAL THERAPY, Copenhagen, Denmark, Sept. 7-8.

WORLD MEDICAL ASSOCIATION, Stockholm, Sweden, Sept. 15-21. Dr. Louis H. Bauer, 2 E. 103d St., New York 29, N. Y., U. S. A., Secretary-General.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 26-28. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery.

ARKANSAS: * *Regular.* Little Rock, June 14-15. Sec., Dr. Joe Verser, Harrisburg. *Homeopathic.* Fort Smith, June 7-8. Sec., Dr. Carl S. Bungart, 105 N. 14th St., Fort Smith. *Eclectic.* Little Rock, June 7-8. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Written.* San Francisco, June 25-28 and Aug. 20-23. *Oral.* San Francisco, June 23 and Los Angeles, August 18. *Oral and Clinical Examination for Foreign Medical School Graduates.* San Francisco, June 24 and Los Angeles, August 19. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

CONNECTICUT:* *Regular. Examination.* Hartford, July 10-11. Sec. to the Board, Dr. Creighton Barker, 160 St. Ronan St., Hartford. *Homeopathic.* Derby, July 11-12. Sec., Dr. Donald A. Davis, 38 Elizabeth St., Derby.

DELAWARE: Dover, July 10-12. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA:* *Reciprocity.* Washington, June 11. Sec., Dr. Daniel L. Seckinger, 4130 East Municipal Bldg., Washington.

FLORIDA:* *Examination.* Jacksonville, June 24-26. Sec., Dr. Homer L. Pearson, 701 DuPont Bldg., Miami.

GEORGIA: Atlanta, June. Augusta, June. Sec., Mr. R. C. Coleman, 111 State-Capitol, Atlanta.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Ex. Sec., Dr. John Y. Battenfield, Agana.

HAWAII: *Examination.* Honolulu, July 9-12. Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

IDAHO: Boise, July 9-11. Sec., Mr. Armand L. Bird, 305 Sun Bldg., Boise.

INDIANA: Indianapolis, June 20-22. Exec. Sec., Miss Ruth V. Kirk, 1138 K. of P. Bldg., Indianapolis 4.

IOWA: * *Written.* Iowa City, June 11-13. Sec., Dr. M. A. Royal, 506 Fleming Bldg., Des Moines.

KANSAS: Kansas City, June 6-7. Sec., Dr. O. W. Davidson, 864 New Brotherhood Building, Kansas City.

KENTUCKY: Louisville, June 6-8. Sec., Dr. Bruce Underwood, 620 S. 3rd St., Louisville.

LOUISIANA: New Orleans, June. Sec., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans 12.

MAINE: Augusta, July 10-11. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: Baltimore, June 19-22. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, June 19-20. *Examination.* Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: *Examination.* Boston, July 10-13. Sec., Dr. Robert C. Cochrane, Room 37, State House, Boston 33.

MISSISSIPPI: Jackson, June. Asst. Sec., Dr. R. N. Whitfield, Jackson 113.

MISSOURI: St. Louis, May 31-June 1, June 7-9. Exec. Sec., Mr. John A. Hailey, Box 4, State Capitol Bldg., Jefferson City.

NEBRASKA: * June 1951. Director, Mr. Oscar F. Humble, Room 1009, State Capitol Bldg., Lincoln.

NEW HAMPSHIRE: Concord, Sept. 12-13. Sec., Dr. John Samuel Wheeler, Room 107 State House, Concord.

NEW JERSEY: *Examination.* Trenton, June 19-22. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 26-29. Sec., Dr. Jacob L. Lochner, Jr., 23 S. Pearl St., Albany 7.

NORTH CAROLINA: *Endorsement.* Pinehurst, May 7. *Examination,* Raleigh, June 18-21. Sec., Dr. Joseph J. Combs, 419 Professional Bldg., Raleigh.

NORTH DAKOTA: Grand Forks, July 4-7. Sec., Dr. C. J. Glaspel, Grafton.

OHIO: *Examination.* Columbus, June 19-21. *Endorsement.* Columbus, April 3. Sec., Dr. H. M. Platter, 21 W. Broad Street, Columbus.

OKLAHOMA: * *Examination.* Oklahoma City, June 6-7. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

PENNSYLVANIA: *Examination.* Philadelphia and Pittsburgh, July. Acting Sec., Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

SOUTH CAROLINA: *Examination.* Columbia, June 25-27. *Reciprocity.* Columbia, April 2 and May 15. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: Rapid City, July 17-18. Sec., Dr. Clarence E. Sherwood, 109 Center St., West, Madison.

TEXAS:* *Examination.* Austin, June 14-16. Sec., Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth 2.

UTAH: Salt Lake City, July 11-13. Asst. Dir., Mr. Frank E. Lees, 324 State Capitol Bldg., Salt Lake City 1.

VERMONT: *Examination.* Burlington, June. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA: *Examination.* Richmond, June 14-16. Sec., Dr. K. D. Graves, 631 First St., S.W., Roanoke.

VIRGIN ISLANDS: St. Thomas, June 12. Sec., Dr. Earle M. Rice, St. Thomas.

WASHINGTON:* Seattle, July 16-18. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

WEST VIRGINIA: Charleston, July 9-11. Sec., Dr. N. H. Dyer, Capitol Bldg., Charleston 5.

WISCONSIN:* Milwaukee, July 10-12. Sec., Dr. C. A. Dawson, River Falls.

WYOMING: *Examination.* Cheyenne, June 4. Sec., Dr. Franklin D. Yoder, Capitol Bldg., Cheyenne.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ALASKA: Juneau, August. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

ARKANSAS: *Examination.* Little Rock, May 8-9. Sec., Mr. L. E. Gebauer, 1002 Donaghey Bldg., Little Rock.

COLORADO: *Examination.* Denver, June 6-7. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver. 3.

CONNECTICUT: *Examination.* New Haven, June 9. Exec. Asst., Miss Mary G. Reynolds, State Board of Healing Arts, 110 Whitney Ave., New Haven.

FLORIDA: *Examination.* Gainesville, June 2. Sec., Mr. M. W. Emmel, University of Florida, Gainesville.

MICHIGAN: *Examination.* Ann Arbor and Detroit, May 11-12. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

NEBRASKA: *Examination.* Omaha, May 8-9. Director, Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

NEW MEXICO: *Examination.* Santa Fe, June 17. Sec., Miss Marguerite Cantrell, Box 1522, Santa Fe.

OREGON: *Examination.* Portland, June 2, Sept. 8 and Dec. 1. Sec., Dr. Charles D. Byrne, State Board of Higher Education, University of Oregon, Eugene.

RHODE ISLAND: *Examination.* Providence, May 9. Chief, Division of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: *Examination.* Vermillion, June 15-16. Sec., Dr. Gregg M. Evans, 310 E. 15th St., Yankton.

TENNESSEE: *Examination.* Memphis, July 5-6. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WASHINGTON: *Examination.* Seattle, July 11-12. Sec., Department of Licenses, Mr. Edward C. Dohm, Olympia.

* Basic Science Certificate required.

DEATHS

Bishop, Eugene Lindsay ✦ Chattanooga, Tenn.; born in Nashville April 3, 1886; Vanderbilt University School of Medicine, Nashville, 1914; interned at St. Thomas Hospital; received a certificate in public health from Johns Hopkins University School of Hygiene and Public Health, Baltimore, 1923; field director for the Tennessee State Health Department from 1916 to 1918, director of rural sanitation from 1918 to 1922, assistant commissioner, 1923-1924, and commissioner from 1924 to 1935, when he became health and safety director, Tennessee Valley Authority; formerly chairman of the committee on qualifications, State and Territorial Health Officers, and of the committee on federal relations, State and Provincial Health Officers, of which he had been an honorary life member; at one time a member of the National Advisory Health Council and consultant, Committee for Co-ordination of Health and Welfare Activities of the Federal Government; formerly member of the advisory committee to the Committee on Research in Medical Economics; associated with the International Health Division of the Rockefeller Foundation as a member of the board of scientific directors, 1929-1930 and from 1942 to 1944 and elected for a three year term January 1947; life member, past president of the Southern Branch, formerly member of the executive board and council and past president of the American Public Health Association, which in October 1950 presented him with the Lasker Award "for accomplishments in Public Health Administration"; member of the American Society of Tropical Medicine, National Malaria Society, American Association for the Advancement of Science, Southern Medical Association, Alpha Omega Alpha, Alpha Kappa Kappa and Delta Omega; secretary of the Section on Preventive and Industrial Medicine and Public Health, American Medical Association, 1926 to 1929, and chairman, 1929-1930; assistant professor of preventive medicine and public health at his alma mater; specialist certified by the American Board of Public Health; died in Vanderbilt Hospital, Nashville, February 27, aged 64, of arteriosclerotic heart disease with congestive failure and renal insufficiency.

Hanzlik, Paul John ✦ San Francisco; born in Shueyville, Iowa, July 24, 1885; Western Reserve University Medical Department, Cleveland, 1912; also a graduate in pharmacy; associated with the Pharmacological Institute and Physico-Chemical-Biological Institute, University of Vienna, 1913-1914; served as captain, medical corps, U. S. Army, attached to Chemical Warfare Service in 1918; after an internship at the Lakeside Hospital, Cleveland, joined the department of pharmacology at his alma mater as a demonstrator, later becoming instructor, associate, assistant and associate professor; emeritus professor of pharmacology at Stanford University School of Medicine, where he had been executive of the department and since 1921 professor; member of the advisory committee to the Scientific Exhibit of the American Medical Association for many years; vice chairman of the council on dental therapeutics of the American Dental Association; member of the American Physiological Society, Society for Pharmacology and Experimental Therapeutics, Society for Experimental Biology and Medicine, American Society for Biological Chemists, California Academy of Medicine, American Association for the Advancement of Science and the International Association of Dental Research; honorary fellow of the American College of Dentists; fellow of the American College of Physicians; consulting pharmacologist, San Francisco Department of Health since 1934 and for the U. S. Department of Agriculture from 1936 to 1944; associate editor of the *Journal of Pharmacology and Experimental Therapeutics* from 1921 to 1934; associate editor of *Archives Internationales de Pharmacodynamie et de Therapie;* author of "Actions and Uses of the Salicylates and Cinchophen in Medicine"; co-author with Dr. Torald Sollmann of "Fundamentals of Experimental Pharmacology," first edition, 1928, and second, 1939; editor of "Handbook of Accepted Remedies, Symptoms and Treatment of Poisoning, Diagnostic Procedures and Miscellaneous Information," third edition published in 1940; died February 1, aged 65, of cerebral thrombosis and arteriosclerosis.

Myers, Burton Dorr ✦ Bloomington, Ind.; born in Attica, Ohio, March 30, 1870; Universität Leipzig Medizinische Fakultät, Saxony, Germany, 1902; dean emeritus at the Indiana University School of Medicine in Bloomington, which he had joined in 1903 as professor of anatomy, serving in this capacity until 1940; became assistant dean in 1920, dean in 1927 and retired in 1940; honored in 1950 when Nu Sigma Nu medical fraternity at the Indianapolis division of the school of medicine established a lectureship in his name; assistant in physiology at Cornell University Medical College in New York from 1898 to 1900 and assistant in anatomy at Johns Hopkins University School of Medicine in Baltimore, 1902-1903; an Associate Fellow of the American Medical Association; member of the American Association of Anatomists, Sigma Xi, Phi Beta Kappa, Alpha Omega Alpha; served as president of the Monroe County Tuberculosis Association; president of the Association of American Medical Colleges, 1928-1929; a charter member and past president of the Bloomington Kiwanis Club and district governor and international trustee of the organization; vice chairman of the Indiana State Planning Board; superintendent of the Greenwich, Ohio, schools in 1893; past president of the Bloomington Chamber of Commerce; since retirement from the deanship had been writing the history of the university from 1902 to 1937, a volume on the history of medical education in Indiana and a biography of the trustees, vice presidents, treasurers, and secretaries of the university from 1820 to 1950; the biography was scheduled to come off the press March 10; died February 28, aged 80, of cardiac failure.

Haines, Thomas Harvey, Montclair, N. J.; born in Moorestown, N. J., Nov. 4, 1871; Starling-Ohio Medical College, Columbus, 1912; later studied in Munich, Zurich and London; formerly assistant porfessor of philosophy and professor of psychology at Ohio State University in Columbus, where he was professor of medicine and nervous and mental diseases; served as part time professor of psychology at Smith College in Northampton, Mass.; life member of the American Psychiatric Association; fellow of the American Association for the Advancement of Science; clinical director of the Ohio Bureau of Juvenile Research in Columbus from 1914 to 1917; at one time field consultant and director of mental health surveys for the National Committee for Mental Hygiene and director of the division on mental deficiency; member of the committee on psychological examination of recruits, National Research Council, in 1917 and psychological examiner for the U. S. Army from 1917 to 1927; served in the Office of the Surgeon General; civilian with Atomic Energy Commission and member of the Office of Scientific Research and Development; for many years affiliated with the outpatient department of the New York Hospital; author of "Mental Measurement of the Blind" and reports of mental hygiene studies in many states and bills offered in legislatures to improve administration in mental health fields; died March 2, aged 79, of coronary occlusion.

Weeter, Harry Montgomery ✦ Louisville, Ky.; born in Sligo, Pa., Dec. 7, 1887; University of Louisville Medical Department, 1927; specialist certified by the American Board of Pathology; member of the College of American Pathologists and the American Society of Clinical Pathologists; past president of the Jefferson County Medical Society and the Kentucky Society of Pathologists; formerly professor of bacteriology at his alma mater; in 1922 won the Howard Ricketts Prize as a student in pathology at the University of Chicago, where he had been an instructor in bacteriology in 1920; served on the staffs of St. Edward Hospital in New Albany, Ind., Clark County Memorial Hospital in Jeffersonville, Ind., St. Joseph Infirmary, Jewish Hospital and SS Mary and Elizabeth Hospital in Louisville; died February 25, aged 63, of coronary infarction.

✦ Indicates Fellow of the American Medical Association.

Abramovitz, Morris ✦ Baltimore, Maryland Medical College, Baltimore, 1906; died February 7, aged 71, of cerebral hemorrhage.

Alter, Retla H. ✦ Jackson, Mich.; University of Michigan Medical School, Ann Arbor, 1925; member of the American College of Allergists; past president and secretary of the Jackson County Medical Society; for many years secretary-treasurer of the Jackson Academy of Medicine and Dentistry; member of the staff of Foote Memorial Hospital, where he had been chief of the hospital staff and for many years a member of the hospital board; affiliated with Mercy Hospital; died February 14, aged 54, of heart disease.

Amick, Albert Lester, Charleston, W. Va.; College of Physicians and Surgeons, 1907; member of the American Medical Association; honorary life member of the West Virginia State Medical Association; served during World War I; formerly affiliated with Kanawha Valley, St. Francis, McMillan and Salvation Army hospitals; for many years county physician; died March 8, aged 71, of chronic heart disease.

Anderson, James LeRoy, San Antonio, Texas; Western University Faculty of Medicine, London, Ont., Canada, 1909; member of the American Medical Association and the American College of Chest Physicians; affiliated with Robert B. Green Memorial Hospital and Grace Lutheran Sanatorium; died February 3, aged 64, of coronary thrombosis.

Appleman, James Henderson ✦ Chicago; the Hahnemann Medical College and Hospital, Chicago, 1911; served during World War I; died March 9, aged 64, of pancreatitis.

Auten, Will James, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1888; member of the American Medical Association; in 1949 at the annual session of the Medical Association of Georgia in Savannah was presented a certificate of merit and a gold button in recognition of more than 50 years as a practicing physician; died recently aged 85.

Bailey, Frank James ✦ San Francisco; Cooper Medical College, San Francisco, 1899; an Associate Fellow of the American Medical Association; formerly practiced in Red Bluff, Calif., where he was city health officer and county coroner; died February 20, aged 75.

Banks, Claude M., Springfield, Tenn.; University of Tennessee Medical Department, Nashville, 1894; served during World War I; died in the Robertson County Hospital, February 6, aged 83, of myocarditis.

Barker, Merritt Corey, Cortland, N. Y.; Cleveland Homeopathic Medical College, 1901; died in VerNooy Sanitarium January 18, aged 71.

Bauer, Samuel Louis, Cincinnati; University of Cincinnati College of Medicine, 1930; member of the American Medical Association; affiliated with Children's, Bethesda and General hospitals; died February 18, aged 47, of coronary sclerosis.

Bigger, David Andrew ✦ Rock Hill, S. C.; Jefferson Medical College of Philadelphia, 1917; served during World War I; past president of the York County Medical Society and the Historical Society of York County; past chief of staff of York County Hospital; died February 20, aged 59.

Bigler, Sherman Edwin ✦ Neoga, Ill.; Northwestern University Medical School, Chicago, 1907; for many years served on the high school board of education and as physician for the Illinois Central Railroad; died February 18, aged 67, of cancer.

Blair, James Luther ✦ Gastonia, N. C.; Atlanta Medical College, 1915; affiliated with Garrison General Hospital, where he was chief of staff; served as vice president of Gaston Sanatorium; died suddenly February 27, aged 62, of heart disease.

Blank, Frederick ✦ New York; Christian-Albrechts-Universität Medizinische Fakultät, Kiel, Prussia, Germany, 1920; died in Park East Hospital February 14, aged 57, of coronary thrombosis.

Bleick, Theodore Edward, Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1899; member of the American Medical Association; died February 20, aged 82, of chronic endocarditis and posterior spinal sclerosis.

Bolles, Julius Ralph, Napoleon, Ohio; Toledo Medical College, 1904; member of the American Medical Association; formerly health commissioner of Henry County; affiliated with Toledo (Ohio) Hospital; died February 5, aged 72, of cerebral hemorrhage.

Bracy, Rolla, Wellston, Mo.; Barnes Medical College, St. Louis, 1894; formerly county coroner; died in St. Louis County Hospital, Clayton, February 27, aged 86.

Brelsford, Harley H., Cleveland Heights, Ohio; Ohio Medical University, Columbus, 1901; member of the American Medical Association; died February 28, aged 78, of carcinoma of the lung.

Brown, George Niswander, Hebron, Ohio; Starling Medical College, Columbus, 1898; member of the American Medical Association; affiliated with Newark (Ohio) Hospital; died March 22, aged 75, of cerebral hemorrhage.

Brugh, Benjamin Franklin ✦ Clearwater, Fla.; Medical College of Virginia, Richmond, 1915; member of the West Virginia State Medical Association; an Associate Fellow of the American Medical Association; fellow of the American College of Surgeons; served on the staff of the Laird Memorial Hospital in Montgomery, W. Va.; died March 1, aged 61, of coronary occlusion.

Brungard, Otis Daniel ✦ Kenton, Ohio; Western Pennsylvania Medical College, Pittsburgh, 1897; died February 4, aged 80, of carcinoma of the stomach.

Buckmaster, Frank ✦ Effingham, Ill.; Barnes Medical College, St. Louis, 1899; served as chief surgeon for St. Anthony's Hospital until it was destroyed by fire in April 1949; at one time on the faculty of his alma mater; died February 28, aged 74, of valvular heart disease.

Burns, George Samuel ✦ Rochester, N. Y.; Albany (N. Y.) Medical College, 1901; veteran of the Spanish-American War; physician on the draft board during World War I; member of the Rochester Academy of Medicine and the Rochester Pathological Society; on the staffs of the St. Mary's Hospital and Highland Hospital, where he died February 23, aged 76, of ruptured aneurysm of the abdominal aorta.

Campbell, John Stewart, Cadiz, Ohio; University of Michigan Homeopathic Medical School, Ann Arbor, 1887; president of the Third Equitable Building & Loan Company, of which he had been a director for many years; died February 9, aged 88, of lobar pneumonia and arteriosclerosis.

Chadwick, Isaac A., Carthage, Miss. (licensed in Mississippi in 1902); member of the American Medical Association; died March 14, aged 76, of heart disease.

Clarke, Raymond Willis, Ellsworth, Maine; Medical School of Maine, Portland, 1916; member of the American Medical Association; served during World War I; affiliated with Eastern Memorial Hospital; died February 11, aged 62, of embolism.

Clobridge, Charles E., Allen, Mich.; Cleveland University of Medicine and Surgery, 1897; affiliated with Hillsdale (Mich.) Community Health Center, where he died February 3, aged 81, of cerebrovascular accident.

Conaway, Aaron Clyde ✦ Marshalltown, Iowa; Rush Medical College, Chicago, 1900; twice president of the Marshall County Medical Society; formerly mayor of Marshalltown; served during World War I; later a colonel in the medical reserve corps; affiliated with Evangelical Deaconess Hospital and St. Thomas Mercy Hospital, where he died February 2, aged 74, of heart block.

Crawford, Charles Brown ✦ Washington, D. C.; University of Virginia Department of Medicine, Charlottesville, 1910; died March 17, aged 66, of pulmonary tuberculosis.

Davis, Winnifred Puffer, Cambridge, Mass.; Tufts College Medical School, Boston, 1898; member of the American Medical Association; served on the staff of the Boston Floating Hospital and the Boston Dispensary; died February 18, aged 85.

Dick, Walter ✦ Brookville, Pa.; Medico-Chirurgical College of Philadelphia, 1913; served during World War I; chief of staff, Brookville Hospital; died February 4, aged 62, of heart disease.

Donnelly, Francis Edward, Lee Park, Pa.; Jefferson Medical College of Philadelphia, 1915; member of the American Medical Association; affiliated with Mercy Hospital, Wilkes-Barre, where he died February 6, aged 62.

Dunn, Frank C., Lansing, Mich.; Michigan College of Medicine and Surgery, Detroit, 1892; member of the American Medical Association; formerly county physician; died March 1, aged 79, of chronic suppurative cholecystitis with subphrenic abscess.

Edwards, Henry Arthur, Latta, S. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1899; member of the American Medical Association; died in Mullins (S. C.) Hospital February 8, aged 76, of myocarditis.

Emerick, Edson James, Columbus, Ohio; Long Island College Hospital, Brooklyn, 1887; member of the American Medical Association; past president of the Columbus Academy of Medicine and the American Association for the Study of the Feeble-Minded, now the American Association on Mental Deficiency; one of the founders, and from 1924 to 1930 director, of the Bureau of Juvenile Research; formerly superintendent of the Institution for Feeble-Minded; died in Winter Park, Fla., February 25, aged 87, of bronchopneumonia and arteriosclerosis.

English, Carroll Chapman ✠ Louisville, Ky.; University of Louisville Medical Department, 1904; served during World War I; served on the staffs of Jewish Hospital and Kentucky Baptist Hospital, where he died February 18, aged 71, of coronary occlusion.

Enos, Manuel Manly ✠ Oakland, Calif.; California Medical College, San Francisco, 1896; National Medical College, Chicago, 1901; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; died February 14, aged 75.

Estes, James Leonidas, Tampa, Fla.; Emory University (Ga.) School of Medicine, 1921; member of the American Medical Association and the American Urological Association; affiliated with Tampa Municipal and St. Joseph's hospitals; died February 10, aged 55, of carcinoma of the kidney.

Etheridge, William Maxey, Atlanta, Ga.; Atlanta School of Medicine, 1908; died February 4, aged 77, of uremia and arteriosclerosis.

Flocken, Charles Frederick, Pasadena, Calif.; University of Minnesota Medical School, Minneapolis, 1921; formerly practiced in Minneapolis; died February 4, aged 74, or coronary thrombosis.

Forman, Horace Judson Jr. ✠ Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1904; specialist certified by the American Board of Psychiatry and Neurology; retired in 1943 as consultant in neuropsychiatry, Board of Veterans Appeals, U. S. Veterans Administration, Washington, D. C.; died January 20, aged 66, of arteriosclerotic heart disease.

Fraim, Irving William ✠ Waltham, Mass.; Tufts College Medical School, Boston, 1913; for many years affiliated with Waltham Hospital; since 1932 director of the health staff of the public schools; died in City Hospital, Brunswick, Ga., January 16, aged 61, of cerebral hemorrhage, hypertension and arteriosclerosis.

Francis, Adaline Moxley, Dalton, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1913; died January 30, aged 64, of cerebral thrombosis.

Friedenwald, Gilbert A., New York; Jefferson Medical College of Philadelphia, 1914; died in Phoenix, Ariz., January 14, aged 71, of carcinoma of the lung.

Gardiner, William Robert ✠ Herrin, Ill.; University of Maryland School of Medicine, Baltimore, 1910; member of the American Association of Industrial Physicians and Surgeons; for many years physician for the Illinois Central Railroad; affiliated with Herrin Hospital, where he died February 13, aged 65, of cerebral hemorrhage.

Garvey, Robert Robey ✠ Blowing Rock, N. C.; North Carolina Medical College, Charlotte, 1915; member of the American Urological Association; past president of the Fayette County Medical Society; served on the faculty of the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem; died in the North Carolina Baptist Hospital, Winston-Salem, February 22, aged 61.

Gauch, Frederick ✠ Brooklyn; Long Island College Hospital, Brooklyn, 1911; served during World War I; a founder of the Midwood Hospital, where he died February 5, aged 65.

Gay, James Gaston, Atlanta, Ga.; Johns Hopkins University School of Medicine, Baltimore, 1923; specialist certified by the American Board of Surgery; member of the Southeastern Surgical Congress; associate in surgery at Emory University School of Medicine; affiliated with Crawford W. Long Memorial Hospital, Emory University Hospital, St. Joseph Infirmary and Grady Hospital; died January 22, aged 53, of coronary occlusion.

Gay, Ray Jackson ✠ Kansas City, Mo.; National University of Arts and Sciences Medical Department, St. Louis, 1914; died in the Research Hospital January 7, aged 59, of coronary thrombosis.

Gay, Robert James, Chicago; Rush Medical College, Chicago, 1902; died in Evanston, Ill., February 25, aged 74.

Gibson, Arias Palmer, Huntington, W. Va.; Kentucky University Medical Department, Louisville, 1905; member of the American Medical Association; affiliated with St. Mary's Hospital and Memorial Hospital, where he died February 13, aged 69.

Glasgow, Marvin Claude ✠ Cardwell, Mo.; University of Arkansas School of Medicine, Little Rock, 1939; affiliated with Community Methodist Hospital in Paragould, Ark.; accidentally drowned in the St. Francis River January 28, aged 41.

Good, Mark Duty, Charleston, W. Va.; University of Louisville (Ky.) Medical Department, 1913; died February 11, aged 66, of arthritis.

Gorfinkell, Julius ✠ Pittsburgh; University of Pittsburgh School of Medicine, 1914; specialist certified by the American Board of Radiology; member of the Radiological Society of North America, Pennsylvania Radiological Society and the American College of Radiology; served during World War I; affiliated with the Braddock (Pa.) General Hospital; died February 25, aged 59, of carcinomatosis.

Gradman, Leo I. ✠ Chicago; Chicago Medical School, 1918; on the staff of the South Chicago Community Hospital; died in Wesley Memorial Hospital February 9, aged 63.

Graham, Robert Hugh ✠ Aurora, Ill.; Rush Medical College, Chicago, 1920; member of the American Academy of Pediatrics; served during World War I; affiliated with St. Charles Hospital, St. Joseph Mercy Hospital and Copley Memorial Hospital, where he died March 20, aged 58, of coronary occlusion.

Green, Herbert Augustus, Portsmouth, Ohio; Starling Medical College, Columbus, 1904; member of the American Medical Association; veteran of the Spanish-American War; affiliated with Portsmouth General Hospital and Mercy Hospital; died in Pensacola, Fla., February 14, aged 72, of heart disease.

Hail, Richard Allen, Robertsdale, Ala.; University of Tennessee Medical Department, Nashville, 1894; member of the American Medical Association; died February 25, aged 84, of pneumonia, coronary heart disease and arteriosclerosis.

Haile, Leon Campbell ✠ St. Louis; St. Louis University School of Medicine, 1920; on the staff of Missouri Pacific Hospital; died February 25, aged 56, of injuries suffered when he fell from a window.

Halsey, John Taylor, New Orleans; College of Physicians and Surgeons, medical department of Columbia College, New York, 1893; since 1937 professor of pharmacology emeritus at Tulane University of Louisiana School of Medicine; served in France during World War I; died February 12, aged 80, of arteriosclerotic heart disease.

Harless, Leonidas R. ✠ Gauley Bridge, W. Va.; Kentucky University Medical Department, Louisville, 1905; died February 27, aged 73, of heart failure.

Hassenplug, Frank Atwood, Denver; Jefferson Medical College of Philadelphia, 1890; died in Denver General Hospital February 14, aged 84, of bronchopneumonia.

Henry, Ralph Howard ✦ Allentown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1924; certified by the National Board of Medical Examiners; founder and first president of the Lehigh County Crippled Children's Society; served as president of the Pennsylvania Physical Therapy Association; affiliated with Allentown General Hospital; died February 15, aged 51.

Ivey, Henry B. ✦ Goldsboro, N. C.; University College of Medicine, Richmond, 1911; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society, Radiological Society of North America and the American College of Radiology; past president of the Wayne County Medical Society and the North Carolina Radiological Society; affiliated with State Hospital; died February 3, aged 62, of cerebral hemorrhage.

Jackman, Luther Taylor, Huntington, N. Y.; North Carolina Medical College, Davidson, 1900; affiliated with North Country Community Hospital in Glen Cove, N. Y.; died in Huntington Hospital February 24, aged 85, of bronchopneumonia, arteriosclerotic heart disease and fracture of the right femur.

King, Allen Thurman, Wyoming, Ohio; University of Cincinnati College of Medicine, 1911; died in Bethesda Hospital, Cincinnati, February 23, aged 61, of heart disease.

Kissinger, Chester A., Milwaukee; Milwaukee Medical College, 1907; for many years on the faculty of Marquette University School of Medicine; on the staff of St. Joseph's Hospital; died in the Mayo Clinic, Rochester, Minn., February 2, aged 69, of pemphigus.

Klostermann, Louis Julious, Hoyleton, Ill.; Homeopathic Medical College of Missouri, St. Louis, 1898; member of the American Medical Association; died in St. Mary's Hospital, Centralia, February 18, aged 73, of hemorrhage and duodenal ulcer.

Knowlton, Louis Gordon ✦ Berea, Ohio; Western Reserve University Medical Department, Cleveland, 1900; one of the founders of Community Hospital, where he was the first chief of staff from 1924 to 1947; died in Franklin, La., February 4, aged 75, of coronary disease.

Krahn, George Washington, Oconto Falls, Wis.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1912; served as councilor of the Eighth District of the State Medical Society of Wisconsin; died in Tampa, Fla., February 16, aged 62, of pulmonary tuberculosis and Raynaud's disease.

Krause, Charles Shurz ✦ Cedar Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1904; fellow of the American College of Surgeons; past president of the Linn County Medical Society; affiliated with St. Luke's and Mercy hospitals; died February 2, aged 75, of coronary disease.

Latham, Logan Lancaster ✦ California, Mo.; Barnes Medical College, St. Louis, 1905; president of the Moniteau County Medical Society; served during World War I; owner and medical superintendent of the Latham Sanitarium; died in Jefferson City, Mo., February 11, aged 68, of coronary thrombosis.

LeFevre, Caroline Hurd, Shoreham, N. Y.; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1897; formerly practiced in Brooklyn, where she was affiliated with New York Infirmary and Prospect Heights Hospital; died February 15, aged 82, of arteriosclerotic heart disease.

Lieberman, B. Albert ✦ Kansas City, Mo.; University Medical College of Kansas City, 1895; Bellevue Hospital Medical College, New York, 1896; on the staff of Menorah Hospital, where he died February 19, aged 76, of cerebral hemorrhage.

Livingston, William Harold, New York; Long Island College Hospital, Brooklyn, 1916; served during World War I; formerly medical director of Montefiore Hospital in Bedford Hills, N. Y.; died February 5, aged 55.

Loudon, John Parker, Yakima, Wash.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1908; member of the American Medical Association; fellow of the American College of Surgeons; on the staff of St. Elizabeth Hospital, where he died February 18, aged 67, of cerebral hemorrhage.

Lowther, Ray Roberts ✦ Denver; University of Colorado School of Medicine, Denver, 1913; for many years on the staff of Denver General Hospital; died in St. Joseph's Hospital February 1, aged 60, of carcinoma of the pancreas and liver.

Lundoff, John Fritiof, Brooklyn; Long Island College Hospital, Brooklyn, 1912; on the courtesy staff, Swedish Hospital, where he died February 22, aged 73, of carcinoma of the intestine.

McCabe, Walter Wallace, Chicago; Northwestern University Medical School, Chicago, 1909; member of the staff of St. Mary of Nazareth Hospital, where he died February 5, aged 66, of coronary thrombosis and myocardial infarction.

McCarty, Virgil Warren ✦ Kansas City, Mo.; University of Kansas School of Medicine, Kansas City, 1912; specialist certified by the American Board of Otolaryngology; served during World War I; affiliated with Children's Mercy and St. Luke's hospitals; died February 25, aged 65, of hypertensive cardiovascular disease.

McClure, Charles Oscar ✦ Trinidad, Colo.; Gross Medical College, Denver, 1893; city and county health officer; formerly practiced in Starkville, where he was a member of the district school board; served on the city council; affiliated with Mount San Rafael Hospital; died in Presbyterian Hospital, Denver, February 4, aged 83.

McDavid, Jesse Taylor, Decatur, Ill.; Barnes Medical College, St. Louis, 1904; member of the American Medical Association; served in France during World War I; on the staffs of the Decatur and Macon County Hospital and St. Mary's Hospital, where he died March 20, aged 73, of cerebrovascular hemorrhage.

MacKedon, William Leo ✦ Milwaukee; Harvard Medical School, Boston, 1919; served on the staffs of Johnston Emergency, St. Michael and Evangelical Deaconess hospitals; died March 2, aged 61, of cardiovascular disease.

Maley, William Henry, Galesburg, Ill.; Rush Medical College, Chicago, 1897; member of the American Medical Association; past president of the Knox County Medical Society; served overseas during World War I; for many years alderman; on the staffs of St. Mary's and Galesburg Cottage hospitals; died February 28, aged 83, of cardiac infarct and cholangitis.

Mardis, Chauncey J., Dayton, Ohio; Cornell University Medical College, New York, 1927; member of the American Medical Association; affiliated with Good Samaritan Hospital and the Miami Valley Hospital, where he died February 27, aged 52, of carcinoma of the lung.

Matthews, Jasper Thomas, Heber Springs, Ark.; University of Arkansas School of Medicine, Little Rock, 1912; member of the American Medical Association; founder and owner of Estelle Hospital; county and city health officer; died February 4, aged 65, of coronary occlusion.

Noonan, James Joseph, Cohoes, N. Y.; Albany (N. Y.) Medical College, 1897; on the staff of Cohoes Hospital, where he died February 20, aged 76, of arteriosclerotic heart disease.

O'Brien, Joseph Vincent, Boston; Harvard Medical School, Boston, 1935; member of the American Medical Association; served during World War II; on the staffs of the Boston City Hospital, St. Margaret's Hospital and Carney Hospital, where he died February 16, aged 43, of melanosarcoma.

Pollard, Willis John, Wichita Falls, Texas; medical department of Tulane University of Louisiana, New Orleans, 1880; member of the American Medical Association; at one time secretary of the Kaufman County Medical Society and in 1920-1921 vice president of the State Medical Association of Texas; in 1923 joined the staff of the Wichita Falls State Hospital and retired from the position of assistant superintendent in 1945; died recently, aged 91, of cardiac failure.

GOVERNMENT SERVICES

NAVY

Surgical Teams at the Front in Korea.—The Korean war has seen the development by the Navy of a new medical technique which reduces the former death-toll among troops badly wounded in the first waves of an amphibious attack on enemy beaches. Teams of Navy surgeons and enlisted assistants are now placed aboard landing ships with fully equipped operating rooms and go in to the assault beaches at H-hour with the attacking troops. Thus they are on hand to operate immediately on wounded men who might not survive a long boat ride to a hospital ship off shore.

Formerly, doctors and hospital corpsmen going ashore with first waves of amphibious landing forces could only administer temporary treatment to the wounded. Definitive surgery had to wait until the patient could be taken to a hospital ship or a a large transport, which, depending on enemy resistance to the landing, might be two to eight miles from the beach. Proving ground for the surgical teams was the amphibious invasion at Inchon, Korea, last September, where six original teams carried out the new plan with success. Almost 100 per cent of the troops critically wounded in the early hours of the Inchon assault were treated by the four surgical teams who went in to the beaches in Navy LST's. The two remaining teams waited offshore aboard larger ships to receive casualties for further treatment and hospitalization aboard the ships or evacuation to hospitals in Japan.

Somewhat similar surgical teams were used in the South Pacific operations and the Normandy invasion of World War II, but Inchon was the first landing where a carefully plotted technique was used to coordinate the work of the teams with the intricate military tactics of an amphibious assault. Credit for developing the idea of the surgical team and for working out a detailed scheme for its use in amphibious landings belongs to Capt. Albert T. Walker (MC, USN), Pacific Fleet Surgeon. The organization and direction of the surgical teams' activities in the Korean war has been accomplished by Comm. Charles H. Eaton (MC, USN), who started executing Captain Walker's plan promptly following the war's outbreak.

Each surgical team consists of three physicians and 10 enlisted hospital corpsmen. No team ever drilled more seriously or regularly than did the surgical teams preparing for Inchon. One corpsman had the task of giving plasma or whole blood to the patient, while another cleaned the wounded area for surgery. Still another took care of fractured limbs. Sterilizing equipment and keeping it ready for use was the job of another. One surgical team went to the Inchon beach in an LST laden with amtracks and amunition. While the explosive cargo was unloaded from one side of the bow, the physicians operated on the wounded brought aboard on the opposite side. Although enemy resistance in Inchon was only moderate, this team received 95 wounded, many requiring extensive chest or abdominal surgery. Not one was lost after reaching the operating table.

The second phase of the surgical team's work comes when the beachhead is secured and the fighting lines move inland. At this time the teams become available for work on the hospital ship, aboard large transport ships where extra hospitals have been set up, or they pack up their equipment and follow the troops ashore. The idea is still to reach the wounded within the "Golden Period." Three days after the initial Inchon landing Team Two moved inland and set up an operating room in a battered building on Kimpo airfield, wrested from the Communists only a few hours before. The team was ready to start operating within 65 minutes after their trucks rolled onto the airstrip.

At Kimpo the team worked in cooperation with a Marine medical company, and in one week of continuous operating over 1,900 persons were given aid. These included Marines, Army, South Korean, North Korean, military and civilian alike. Only one life was lost on the operating table at Kimpo during the entire period. Ultimately, all the teams were returned to the U. S. Naval Hospital at Yokosuka, Japan, to give the benefit of their experience to other surgical teams being organized there. Frequently the teams have been reformed for mission back to Korea. At the present there are many surgical teams on standby duty in the Far East. Until needed for a possible new amphibious attack they are integrated into the staffs of hospitals, hospital ships or other vessels where they constantly train for their team jobs by working with wounded men evacuated from the battle front.

Research on Burns.—Ten universities and medical schools have received funds from the Navy Department to carry out a new program of research on "flash" burns—injuries which might result from exposure to an atom blast. The new program will encompass the chemical, physiological and biophysical aspects of burns. All distortions of natural processes of the body, such as might occur in the wake of blasts, will come under investigation. From the research, it is hoped, will emerge new means of protecting military and civilian personnel from burn injuries and new methods of treating flash burn casualties.

Institutions receiving Navy funds are: University of Rochester, Rochester, N. Y.; Medical College of Virginia, Richmond, Va.; Harvard University, Cambridge, Mass.; University of Minnesota, Minneapolis; University of Colorado, Boulder, Colo.; Medical College of South Carolina, Charleston, S. C.; Columbia University, New York; Hahnemann Medical College, Philadelphia; Boston University, Boston, and the University of California, Berkeley, Calif.

Dr. J. L. Lilienthal Jr., professor of environmental medicine at Johns Hopkins University, will administer the program in cooperation with the physiology branch of the Office of Naval Research.

The project steering committee is headed by Dr. Isaac Starr, professor of therapeutic research, University of Pennsylvania. Other members are Dr. Herman E. Pearse, professor of surgery, University of Rochester; Dr. Kenneth C. Blanchard, associate professor of pharmacology, Johns Hopkins University; Dr. Alan R. Moritz, professor of pathology, Western Reserve University, and Dr. E. I. Evans, professor of surgery, Medical College of Virginia.

The Harold W. Smith Lecture.—The Naval Medical School, Bethesda, Md., has created an annual lectureship to be called the Harold Wellington Smith Lecture in honor of Rear Admiral Harold W. Smith, U.S.N., retired, former commanding officer of the Naval Medical School and the Naval Medical Center. Admiral Smith entered the Navy in 1904 after three years of residency in Massachusetts General Hospital. He served with distinction in many important positions until his retirement from active duty in 1946. He received the Legion of Merit for his achievements in medical research. Admiral Smith is now living at the Westchester Apartments in Washington.

The physician selected to give the first lecture in this annual series, on April 27, was Dr. Hans Selye, director of the Institute of Experimental Medicine and Surgery, University of Montreal, Montreal, Canada. The surgeon general of the Navy, Rear Admiral Lamont Pugh, spoke on Admiral Smith's contributions to medicine.

Clinical Psychologists Needed.—The Navy's Bureau of Medicine and Surgery announces there will be 18 Civil Service positions for clinical psychologists available at its continental hospitals and recruit training facilities in early May. The positions pay from $5,400 (for the GS-11) to $8,800 (for the GS-14) per annum. Clinical psychologists may apply for these positions by addressing a request to the Bureau of Medicine and Surgery, Attn.: Professional Division, Navy Department, Washington 25, D. C.

PUBLIC HEALTH SERVICE

The Annual Report.—Important advances along the health front in the United States during the last year are recounted in the 1950 annual report of the Public Health Service recently made public. Specific observations in medical and related research are listed, together with reports on progress made toward meeting the nation's needs for hospitals and health centers, toward increasing trained health personnel and strengthening state and local health services.

The report shows that the 1949 death rate followed the same declining trend that has been shown during the past 10 to 20 years. In 1949 the death rate declined from 9.9 per 1,000 population in 1948 to 9.7 per 1,000. Although 3,700,000 babies were born in the United States in 1949, fewer infants died in the first year of life. Maternal deaths also declined. In 1949 the infant mortality rate was 31 for every 1,000 live births, and the maternal mortality rate was 9 per 10,000 live births. The birth rate was 24.1 per 1,000 population, as compared with 24.2 in 1948.

Deaths from chronic diseases showed little change from the 1948 figure, although mortality from these diseases has been mounting with the growing and aging population. Heart disease and cancer continued to hold the first and second places in the list of the most frequent killers. These two causes together accounted for half the 1,446,000 deaths from all causes in 1949. The death rate from heart diseases was 20 per cent higher than in 1940; the cancer death rate was 15 per cent higher. Fewer cases of diphtheria, influenza, malaria, scarlet fever, whooping cough and smallpox were reported in 1949 than in any other year. In contrast, new highs were reported for chickenpox, amebic dysentery and poliomyelitis. National marriage and divorce rates also declined in 1949. The marriage rate was 10.7 per 1,000, the lowest since 1939. The divorce rate declined for the third consecutive year. The rate in 1949 was 2.6 per 1,000 population, as compared with 2.8 per 1,000 in 1948.

Doctor Warner Assigned to Near East.—Dr. Estella Ford Warner has been assigned to a foreign mission in public health under the Point 4 program. Dr. Warner has been chief of the Division of State Grants of the Public Health Service, which administers the multimillion dollar program of federal grants to states for development of state and local health services. She will now participate in a new project that will help establish a school of public health at the American University in Beirut, Lebanon. This will be the first public health training facility in the area and will train students and subprofessional personnel from all the Arab countries.

Many of Dr. Warner's 30 years in medicine have been in administering public health programs in underprivileged areas. After graduating she joined the YWCA staff and was assigned to work among refugees in Archangel, Russia. For years she worked among Indians in New Mexico, Colorado, Arizona and California. She first practiced medicine as a pediatrician in Portland, Ore., and later was director of the child hygiene program in that state. She was the first woman to be commissioned in any of the unifiormed services when she received a Public Health Service commission in 1932.

Diseases Traceable to Water and Milk.—A 1949 report on outbreaks of disease traceable to water, milk and milk products and other foods shows that since 1938 there have been 274,557 cases of disease that have occurred during 4,189 outbreaks of this kind in the United States. There were 693 deaths from these causes during this period. During 1949 there was an increase of 951 reported cases of waterborne infections over the previous year and a decrease of 367 cases of diseases caused by milk and milk products. The 1949 figures are: water—25 outbreaks, 1,570 cases, three deaths (one less than in 1948); milk and milk products—15 outbreaks, 246 cases, no deaths (compared with two deaths in 1948); other foods—367 outbreaks, 9,043 cases, 11 deaths. The totals for the period 1938-1949 inclusive are: water —130,524 cases, 94 deaths; milk and milk products—16,170 cases, 103 deaths; other foods—113,205 cases, 430 deaths; undetermined—14,558 cases, 66 deaths.

Dr. Leonard A. Scheele, the Surgeon General, commented, "the summary of disease outbreaks unfortunately reflects only a fraction of the true picture because literally thousands of cases occurring every year are never reported to health departments." He stated that reported figures for outbreaks and cases resulting from foods other than milk and milk products are believed to represent no more than 10 to 15 per cent of the true number of occurrences. Outbreaks attributed to water and milk, according to the report, have declined by more than 50 per cent in the past 10 years, but outbreaks traced to other foods have shown a steady increase. One outbreak of 107 cases of infectious hepatitis in Glide, Ore., was traced to water from a well drilled at the local school. An outbreak of 132 cases of food poisoning among school children in Middlesex County, Mass., was traced to improperly pasteurized milk. Copies of the report are available from the Public Health Service, Federal Security Agency, Washington 25, D. C.

MISCELLANEOUS

Science Advisor to the State Department.—Joseph B. Koepfli, Ph.D., formerly instructor in pharmacology at Johns Hopkins University School of Medicine and now research associate in chemistry at the California Institute of Technology, has been named science adviser in the Department of State. Creation of the office of the science adviser was proposed by Dr. Lloyd V. Berkner, special consultant to the secretary, in his report "Science and Foreign Relations," made public last June.

A major responsibility of the science adviser and his staff will consist of helping shape U. S. foreign policies and of advising on the administration of programs in their science aspects. In assuming this responsibility, Dr. Koepfli's office will draw on the competence of other scientists and will seek to bring about the closest teamwork between American scientists and government officials in policy formulation and administration. His office will serve as the central point in the department of liaison with the National Science Foundation, the National Academy of Sciences, the National Research Council and other public and private science organizations. The office of science adviser will be bolstered by the placement in important foreign service posts of American scientists. These science staffs will keep Dr. Koepfli abreast of developments of science abroad and will facilitate the flow of scientific information between this country and friendly nations.

Appoint Acting Director of Health Resources Office.—Dr. Will H. Aufranc has been appointed acting director, Health Resources Office, National Security Resources Board, succeeding Dr. Norvin C. Kiefer, who has been named director of the Division of Health Services and Special Weapons Defense, National Civil Defense Administration. The Health Resources Office is charged with planning for use of the nation's health resources in wartime. It works closely with the Health Resources Advisory Committee, National Security Resources Board, of which Dr. Howard A. Rusk is chairman. Dr. Aufranc is on loan from the United States Public Health Service. A native of Missouri, prior to coming to the Board last September as a consultant on manpower, he had had 15 years of administrative work in the public health field.

Major General Grant to Direct Red Cross Blood Program.—Maj. Gen. David Grant, USAF retired, surgeon-general of the Air Force during World War II, has been appointed director of the National Blood Program of the American Red Cross effective May 1, succeeding Dr. G. Foard McGinnes, resigned. Dr. Ross T. McIntire will continue to serve as chairman of the blood program Medical Policies and Procedures Committee. Dr. Russell L. Haden, who has been serving as medical director, will become associate director and will be responsible for medical phases of the program. Dr. Grant will direct all phases of the Red Cross Blood Program and be responsible for the further extension of the program to meet increased military and civil defense needs.

FOREIGN LETTERS

LONDON

Paying for the National Health Service.—Under this heading, a review of the National Health Service costs appeared in an editorial in the *British Medical Journal* of March 3, 1951. For many years before 1948, the British Medical Association had been working out its own ideas for a comprehensive medical service. It was more concerned with the organization of such a service than with the economics of it. In general however, on a basis of experience gained by the National Health Insurance the Association was in favor of an insurance scheme.

As the Minister of Health, Mr. Hilary Marquand, usefully reminded the country a few days ago, insurance contributions accounted for only $112,000,000 of the $1,120,000,000 that is now the annual bill for the National Health Service. Ninety per cent of this cost is paid for by the public out of taxation; that is, by the bulk of the wage earners of the country, who have progressively less choice in the spending of their money.

The illusion of getting something for nothing undoubtedly lessens the sense of responsibility of those who apparently think they can get for nothing things that they formerly were prepared to buy for themselves, for example, household remedies, such as aspirin, purgatives and laxatives, first aid dressings, cotton wool and bandages.

The medical association's approval of the Beveridge Report of 1942 was an endorsement of a view the profession had always held, namely, that there should be no financial obstacle between the patient and the treatment he needs, and, as stated in the *British Medical Journal* article mentioned above, one could argue with even greater force that there should be no financial obstacle between the people of this country and the food they need, if body and soul are to be kept together. To carry the argument to its absurd conclusion and to state that the man and the woman in the home should not pay for their bread and butter would soon land us in a state peopled by men and women without initiative or sense of responsibility.

Now that the country is entering a phase in which each item of state expenditure is carefully scrutinized, the medical profession will be just as much concerned as the Ministry of Health to see that the essentials of the service have not in part to be sacrificed because of the waste of money on nonessentials.

The above-mentioned article cites as an example that there are large numbers of persons who are now going about with two pairs of spectacles at the cost of the state, although one pair would have sufficed. Thousands of persons are visiting their physicians to get apparently free of charge those domestic remedies that they formerly were content to buy for themselves.

It has been suggested that there might have to be charges throughout the service for such items. This in no way offends against the idea of a comprehensive medical service, or against the idea that there should be no financial obstacle between the patient and the treatment he needs. There is now in Australia an arrangement whereby the essential and expensive drugs, such as the antibiotics, should be completely free of charge, while the rest should be paid for. The *British Medical Journal* says that it should not pass the wit of the administrators to make provision for such special categories as old age pensioners.

In evidence before the Select Committee on Estimates, the British Medical Association suggested that there was a case for an inquiry into the possible levying of a "hotel charge" for board on patients admitted to hospitals and that a contribution toward the cost of appliances should be made. If some economic reform on these lines could be worked out, then the state would in effect be doing for the medical services what it is doing for the food services; that is, it would be subsidizing the service to such an extent as to relieve the economic strain on the consumer, while at the same time leaving the consumer with the free choice of the commodity and a sense of individual responsibility for paying his own way without hardship.

If any government wishes to impose certain charges in the National Health Service, it will have to take its courage in both hands and before doing so will have to take great care to see that the public fully understands all the aspects of the case. It could be argued that, with the introduction of token charges in relation to different items of medical care, the country would have both a more efficient and a less costly comprehensive medical service. The article in the *British Medical Journal* concludes by saying that this subject might well be the basis of a joint inquiry on the part of both the medical profession and the economists.

The Meat Shortage.—In an editorial, the *British Medical Journal* of Feb. 17, 1951, reviews the present meat shortage in Britain. It is fortunate that the Nutrition Society should have chosen the comparative merits of animal and vegetable foods in nutrition as the subject of its most recent discussion. At least the people of Britain have the benefit of expert advice on the nutritional risks they incur and how best to avoid them, even if many go hungry or more probably lose their appetites from dull and unattractive meals.

The proteins of meat are of high nutritional value. Little is lost in their conversion into proteins needed for human body growth or repair. The value of fish, poultry, eggs, milk and cheese proteins is equal to that of meat proteins. Many cannot obtain poultry or fish because of their scarcity and high cost. Milk and cheese, although rather cheap, are on the whole a poor basis for appetizing dishes.

Butcher's meat is missed not only as a source of protein but for its reasonably priced and highly flavored extracts. A slice of meat or a spoonful of stew greatly encourage the consumption of substantial amounts of green vegetables, potatoes, or other starches. On the other hand, there is ample proof that robust health may be easily maintained by vegetarian diets that include milk and possibly eggs.

Dr. S. G. Willimott has shown that 36 to 44 Gm. of animal protein per person were consumed daily in Britain during the period 1939-1949 and that this amount seems luxurious when compared with the 5 Gm. that during the war had to satisfy Japanese civilians and European prisoners of war in internment camps.

It has been shown by Dr. R. F. A. Dean, working in Germany with Professor McCance and Miss Widdowson, that orphan children grew remarkably well when given most of their protein in the form of bread and vegetables. Also Dr. S. K. Kon experienced no ill effects from a diet of potatoes and butter lasting several months.

In spite of the above mitigating factors, there is a darker side to the general picture of the meat shortage. Not all members of internment camps survived to tell of their privations. Africans who rely too much on vegetable proteins may develop kwashiorkor, a disease closely studied by Drs. Cecily Williams, H. C. Trowell, Lucy Wills and others. The most prominent features of this disease are an enlarged liver and anemia, with a characteristic fading of the skin and hair as an external sign. The malady affects both children and adults and is often fatal. A similar condition has been observed in the West Indies by Waterlow and in the Balkans by Czerny. When there is such plain evidence of injuries caused by extreme deficiency of animal protein, suspicion must be raised that less spectacular ill effects might well occur in a partial deficiency.

It may be useful to remember that when two proteins defective in one or more amino acids are consumed one often compensates for the deficiencies of the other; thus a mixed vegetable diet is less objectionable than a diet in which one particular vegetable greatly predominates. A few vegetable proteins, however, have nutritional values approaching those of animal proteins.

Protein of the soya bean deserves special mention in this connection, and potato protein is also valuable. In food flavoring

one might pay more attention to the intricacies of Chinese cookery, which appears to conjure savory flavors from the soya bean and to produce something like chicken soup with a basis of wheat gluten.

Since the nutritive value of animal protein is in part due to the associated vitamin B_{12} content, alternative sources of this factor, such as by products of the antibiotics industry, are possibly worth further development.

As pointed out by Dr. D. A. Boyd, the prices paid abroad for mutton and beef are only half those we paid to our home farmers. At present, therefore, we seem to be paying an insurance premium to maintain a prosperous agricultural community at home by greatly limiting supplies from abroad.

TURKEY

Tuberculosis in Turkey.—At the eleventh National Medical Congress, held at Ankara, Oct. 16-19, 1950, Ord. Prof. Tevfik Saglam of Istanbul University presented a report on tuberculosis in Turkey. Professor Saglam, the foremost authority on tuberculosis in Turkey, who for almost 20 years has been active in tuberculosis control work in Istanbul, gave a short history of societies for the prevention of tuberculosis, the first of which was founded in 1916 in Istanbul but was short-lived because of conditions arising in the wake of World War I. In 1923 a society was established in Izmir (Smyrna), but it was not very active. In 1926 the Istanbul society was reestablished; it became very active, especially after 1940, when the effect of war conditions was reflected in a rising incidence in tuberculosis.

According to prewar statistics, the tuberculosis death rate in Turkey's three largest cities, Istanbul, Ankara and Izmir, was 150 to 200 per hundred thousand and in rural communities 80 to 100. Considering that 18,000,000 persons are living today in 40,000 villages, tuberculosis takes on an important aspect. In January 1949 the Ministry of Health and Social Assistance called in an advisory council; as a result the bill introduced by the ministry became law in April and accordingly £30,000,000 (£3,000,000 for 10 years) was allocated for tuberculosis prevention and control.

Tuberculosis is second in importance among public health problems in Turkey, malaria having almost come under control. Long years of malaria control work, the application of DDT and administration of quinacrine plus health propaganda have considerably lessened the incidence of malaria, and deaths from malaria are now few.

The tuberculosis death rate is 150 to 200 per hundred thousand. The rise in the cost of living, high prices for food and rent and an insufficient number of hospital beds for the tuberculous, resulting in long waiting lists, have greatly increased the spread of the disease among the lower income groups during the war years.

In 1950 the Ministry of Health and Social Assistance had 1,476 beds for tuberculosis patients in tuberculosis hospitals and sanatoriums, of which 90 per cent are free beds, and 1,891 beds at the annexes of general hospitals. However, the waiting lists are still long. There are 635 beds for tuberculous patients under the administration of other ministries; municipalities have 233 beds, provincial hospitals have 82 beds, and minority hospitals (all in Istanbul) have 80 beds. Societies for the prevention of tuberculosis provide 635 beds. Collectively there are 4,397 beds provided by the government, bringing the total of beds for tuberculous patients in Turkey to 5,092, of which 2,528 are in Istanbul. Eight localities, Istanbul, Ankara, Izmir, Bursa, Adana, Adapazar, Eskişehir, Trabezond and Rize, have government dispensaries where free examination and treatment are provided. Of the societies for the prevention of tuberculosis, the Istanbul society is the most active. There are 14 tuberculosis clinics in the poorest and most populated districts. Medicaments and treatment are free, and the very poor patients are given food supplements in addition. All the clinics have x-ray apparatus. There is one mobile unit. Examinations are made in schools and workrooms. The society has a 232 bed sanatorium in Istanbul-Erenköy, established in 1932, which also receives paying patients. In 1943 a school for the training of tuberculosis visiting nurses was established. There are 30 students, but a new building accommodating 50 students is to be opened soon.

With part of the endowment the late Mrs. Naile Saglam bequeathed to the Istanbul Society for the prevention of tuberculosis, a tuberculosis research institute was established in Istanbul and linked to the third medical department of Istanbul University, where Ord. Prof. Tevfik Saglam trains specialists and medical students get experience in tuberculosis detection. The Istanbul society has an income of £3,740,000, of which £1,359,000 derive from the sale of stamps and £740,000 from a 10 per cent tax on places of amusement. Since 1929 the society has published and distributed a health magazine.

Fifty-nine of the 63 provinces have a society for the prevention of tuberculosis; the Ankara, Izmir and Bursa societies are the most active. Many of the provincial societies have their own x-ray apparatus, and treatment and BCG vaccination are free.

Among the recommendations made at the tuberculosis advisory council meeting were the establishment of a separate tuberculosis department at the ministry of health under a director general and the establishment of a campaign council headed by the minister of health and comprised of one ordinarius professor each from Istanbul and Ankara, one member each from the ministries of education, labor, transportation and national defense and three members from tuberculosis prevention societies. Intensification of campaigns in schools, in industry, in the army and in urban and rural communities and the establishment of 85 clinics (one in communities of 10,000 to 15,000 population, two for a population of 50 to 100,000) have also been recommended. Rural communities will need a special program, which can be achieved only under Point 4 or the Marshall Plan. The program provides for the speedy increase of sanatoriums and hospitals. On the average, every year 40,000 persons die of tuberculosis, but to make available so many beds from government funds is impossible. Health, sickness and hospital insurance has not yet been established, and endowments or donations from private individuals are rare.

Bejel or Desert Child Syphilis.—In 1949, when the Ministry of Health and Social Assistance cooperated with the Syrian Health Department, microbiologist Prof. Zühdü Berke of the Ankara Refik Saydam Institute of Hygiene and Dr. Tahsin Berkin, assistant director of the institute, were appointed to make a survey of bilharzia in Syria. They also inquired into bejel, a nonvenereal disease similar to syphilis, yaws and pinta. It is acquired by direct contact, lesions forming in the mouth, nose and throat, and it is endemic among the nomads of the middle Euphrates Valley. Bejel was described in medical literature in 1938. Dr. E. Herndon Hudson, a medical missionary, who since 1936 has lived in close contact with the Arab nomads, reported in the *American Journal of Tropical Medicine* (1946) that bejel is a communicable disease similar to syphilis, yaws and frambesia, differing in several respects and observed mostly in children. Dr. Hanelmann, who lived for several weeks among the desert Arabs, was of the opinion that the disease is syphilis. In 1941, Hoff and Shaby wrote that cardiovascular and central nervous system complications have not been observed and that the disease is not hereditary. In bejel lesions, a great many spirochetes are found, corresponding morphologically to Treponema pallidum. Serologic changes are also similar. Propagation of bejel spirochetes in animals has not yet been successful.

Dr. Reyyad El Safedi, director of health for the Syrian province Eldjezire, Dr. Munir Antiba and Dr. Mehmed Nafiz reported (1) that bejel is common among the Shammar and Sebii nomads, who live in the wide desert area extending from Eldjezire to Mossul and into the lower Euphrates Valley, (2) that bejel has decreased in the Syrian desert and (3) that the real focus is in the Iraquian desert land. The Sebii bedouins believe that nobody can escape the disease and that it is best to have an attack of it during childhood, so they scarify the finger tips and bring the abrasion into contact with an infected area.

According to an old Arabic encyclopedia, the word bejel connotes a disgusting spot or wound. The first signs of the disease are petechial spots and lesions in the mucous membrane of the nose, mouth and throat. The Arabs thought bejel, or child syphilis, a fitting name for the disease. This was confirmed by Dr. Rushdi Sabri Tarzi, inspector general of the Syrian Ministry of Health; Dr. Sabri Izzeddin, director of quarantine and infectious diseases; Dr. Reyyad El Safedi, director of health of the Eldjezire provinces, and Dr. Nafiz.

According to the report of Prof. Zühdü Berke and Dr. Tahsin Berkin submitted to the Ministry of Health and Social Assistance, bejel does not exist in Southern Turkey's border provinces of Hatay, Urfa and Mardin. As the physical features and the climate are entirely different, nomadic desert tribes are not encountered there.

SWEDEN

Pituitary Gland Implantation for Chronic Arthritis.—Some 100 patients with chronic arthritis have recently been treated at the Rheumatic Hospital in Lund by implantation of the anterior lobe of the pituitary gland. At a recent meeting of the Swedish Society of Internal Medicine, Drs. Gunnar Edström and Stig Thune gave an account of their technique and results. The heads of recently slaughtered calves and pigs were rushed to the hospital, where they were dissected out with aseptic precautions. The anterior lobes were ready for implantation about a half hour after the animals' death. Two or three of the lobes were introduced into the gluteal muscles or muscles of the patient's thigh through a 1.5 to 2 cm. long incision made in the skin under local anesthesia, the opening being closed by suture of the skin. Clinical response, when there was one, was prompt, the patient's range of movements being improved and pain and tenderness relieved in a few hours. The reaction was remarkably like that which follows injections of pituitary adrenocorticotropic hormone (ACTH), but while it was less marked it was also more prolonged than the reaction to ACTH.

Analysis of 51 cases in which implantation was done between September 1949 and March 1950 shows that in November 1950 there were 22 patients who were rendered symptom free and nine who achieved improvement. The disease relapsed in seven cases and was uninfluenced by this treatment in 13 cases. In as many as 27 cases the clinical effects of this treatment were still demonstrable nine months later, and during these months 20 of these patients were completely symptom free. The older the patient, the less satisfactory the results. Results seem to depend on hormone action, to judge by the biochemical reactions observed, for these did not last more than 24 hours or, at most, two days. It is most unlikely that the prolonged effects are due to any successful transplantation of the pituitary gland, for, as Jacobsohn has shown, the implanted anterior lobe quickly undergoes necrosis and is reabsorbed. Drs. Edström and Thune have met the objection that their results might depend on simple operation trauma by control tests with particles of calf brain implanted with the same technique. This control test failed to evoke any of the biochemical or clinical reactions observed when the anterior lobe of the pituitary gland was implanted. The response to implantation being slighter, slower and of longer duration than the response to ACTH, it would seem that the actions of the two are not strictly parallel. Experiments on animals indicate that about half the quantity of injected ACTH is excreted within five minutes, whereas the implanted pituitary gland is disposed of less quickly. It is therefore probably more effective and more biologically desirable. The investigations now proceeding at Lund have also been conducted on parallel lines at Vienna, where Fellinger has introduced the system of deep freezing of the pituitary gland between the slaughter of its owner and its implantation into man. This device is now being given a trial at Lund with a view to preserving the biologic activities of the gland as effectively as possible.

Slow Promotion of Hospital Surgeons.—In the organ of the Swedish Medical Association, *Svenska Läkartidningen*, Dr. Gustaf Petrén of Lund has conducted some interesting inquiries into the average age of hospital surgeons on their appointment to a permanent post. During the decade 1900-1909, the average age was 37.4 years. In the next decade it was 38.2 years, and in the next after that it was 39.5 years. In the decade 1930-1939 it was 41.1 years, and in the decade 1940-1949 it had jumped to 45 years. If the five year period 1946-1950 be taken by itself, the average age was 46.4 years.

Rheumatoid Arthritis of Traumatic Origin.—In a discussion of the existence of traumatic rheumatoid arthritis, Dr. Eric Jonsson of Stockholm quotes Kauffmann's five criteria for acceptance of this diagnosis: 1. The joint must have been normal before the trauma in question. 2. The patient must not have suffered from polyarthritis earlier. 3. The injury to the joint must be considerable. 4. The signs of polyarthritis must have begun in the injured joint. 5. The interval between the trauma and the onset of polyarthritis must not be longer than one to 10 days. While the Anglo-Saxon literature on the subject is scant, much attention has been paid it in Sweden, and it received considerable attention at an inter-Scandinavian conference in Stockholm in 1948. It was pointed out by Berglund and Jonsson that they had succeeded in finding only one such case among 2,236 cases of polyarthritis carefully scrutinized with this possibility in mind. The attitude of insurance authorities and institutions is evidently not the same in Sweden as it is in Norway, for 24 cases of traumatic rheumatoid arthritis have been accepted as such by the Swedish national insurance office while in Norway no patient has been awarded any compensation for traumatic rheumatoid arthritis by its national insurance office. Yet it may be assumed that both trauma and polyarthritis occur with approximately equal frequency in the two countries.

Dr. Jonsson quotes Ponteva as saying that though trauma is common under military conditions in Finland, its responsibility for subsequent rheumatoid arthritis is questioned in this country. Dr. Jonsson also refers to a case in which an injury to a joint was quickly followed by signs of polyarthritis, but in which it transpired that the erythrocyte sedimentation rate had been considerably raised before the injury. So it may well happen that rheumatoid arthritis has been unnoticed before a joint is injured, having given rise to no symptoms or, having done so, without the patient recollecting them later on when a joint came to be injured. It is considerations such as these which have led the critics of the theory of traumatic articular rheumatism to be skeptical and to suggest that its patrons have waded out of their depth.

Detention of the Sane in Asylums.—The public and the medical profession lately have been distressed by the fate of a man who was duly certified as insane and admitted to an asylum in 1925. It was a comparatively large institution, but it was not till some 26 years later that he was found to be sane and presumably to have been so all this time. There may be several such cases awaiting the critical attention of alienists mastering the most recent tests and standards by which the line between sanity and insanity can be drawn, and there is a natural desire for a wholesale combing of all the Swedish asylums to rescue similar patients if such are to be found. In defense of the country's asylums, it should be pointed out that of late they have been much understaffed, largely because of the poor quarters and remuneration offered junior members of the medical profession.

Death of Dr. Anders Lambert Wassén.—The death of Dr. Wassén, on January 16 in Gothenburg, ends an exceptionally distinguished career. Born in 1890 in Sweden, he graduated in medicine in 1914 at Uppsala. Many years later he was created Doctor honoris causa at the University of Lund. Two years earlier, in 1934, he was awarded the jubilee prize of the Swedish Medical Society. He was in charge of the Bacteriological Laboratory of Gothenburg from 1924 onward, and it was here that he made his many valuable contributions to bacteriology.

ITALY

Essential Hypertension.—At the National Congress of the Italian Society of Internal Medicine, Professors Melli and Bartorelli reported on essential hypertension, which was defined as a disease characterized by a rise of systolic and diastolic blood pressure, not connected with renal diseases, arteriosclerosis or any other known cause and related to an arteriolar spasm. Essential hypertension is considerably more frequent than all the other forms of hypertension combined; it has a higher mortality rate than cancer, tuberculosis and infectious diseases in general.

Experimental pathology has demonstrated several ways of inducing constant increases of pressure, including production of renal ischemia, various surgical procedures on the nervous system, modifications of humoral endocrine factors and psychic factors. It is likely that the regulation of pressure and its alterations are the result of a combined action of mechanisms in direct reciprocal relation.

There may be asymptomatic forms, in which no sensation may be perceived and no anomaly observed other than manometric readings. In such forms, despite a high blood pressure, an entirely normal life is possible. At the other extreme is so-called malignant hypertension, with a rapidly progressive and irreversible course, leading soon to death.

Between these extremes, there are forms of hypertension that are related to the patient's habits and that are fairly amenable to treatment by adequate rest and dietetic measures. Hypertension in slender patients is certainly not unusual and in these cases further loss of weight entails an unfavorable prognosis. In some cases, there is rapid renal impairment, while in others there is an early tendency toward arteriosclerosis. Therefore, instead of a disease, one should talk about a disease group.

All the forms must be considered with respect to treatment, which, above all, must follow the fundamental concept *primum non nocere* and should never disregard the fundamental notion that hypertension is not a disease in itself, but represents an attempt of the organism to adapt itself to an abnormal situation, represented by the increase in the peripheral resistance. The most recent forms of therapy aim primarily at arresting the spastic arteriolar condition by interrupting the sympathetic nervous influence.

Surgical Treatment of Cancer of the Rectum.—At the fifty-second National Congress of the Italian Society of Surgery, Professor Bastianelli, of the University of Rome, presented a report on the surgical treatment of cancer of the rectum.

He discussed the surgical procedures now considered to be the most adequate for the treatment of cancer of the rectum. Professor Bastianelli concluded that cancer of the rectum is surgically curable in a large proportion of cases (70 to 90 per cent or more) when there is no lymphatic invasion, whatever operative method may be chosen. However, if metastasis occurs in the lymph nodes, the incidence of favorable results is reduced to approximately 20 per cent and may be reduced to zero. In such cases, total excision does not give greater chances of success than conservative methods.

Among the conservative procedures, the intra-abdominal operation may be performed only for rectosigmoid tumors, and tumors in the upper part of the ampulla. Resection by the abdominosacral, abdominoperineal and abdominoanal routes is reserved for tumors located in the middle part of the ampulla, with a lower limit of 4 cm. above the anal sphincter. Under that limit, Professor Bastianelli advises total excision, since statistics demonstrate that tumors in the lower ampulla show the greatest incidence of recurrence.

General Bucciante.—General Alfredo Bucciante recently died in Rome.

An associate professor of ophthalmology, decorated with the Italian Distinguished Service medal, he took part in all the campaigns of the war, establishing himself as a distinguished physician and an excellent organizer. An outstanding example in the military health service, General Bucciante, after having served as president of the medicolegal college, which is the supreme medicolegal council of the Armed Forces, later became counselor of the supreme court and president of one of its sections. A specialist in the study on war pensions, he left valuable works on that subject.

COLOMBIA

Human Placenta in Treatment of Ulcers and of Fistulas.—Dr. A. Luque Forero recently published an article reporting the use of human placenta in the treatment of fistulas, wounds and varicose ulcers (*Medicina y Ciencias Afines*, vol. 2, nos. 6 to 9, Bogotá, 1950). The work was based on previous studies by Dr. V. V. Tretyakow and by Drs. R. Darmillac and J. Poinot of Bordeaux, who reported good results from the use of human placenta in the treatment of postoperative gastroduodenal ulcer. Dr. Luque Forero used human placenta in 12 cases of gastrointestinal fistula, eight cases of urogenital fistula, five cases of wounds and seven cases of varicose ulcer. Fresh placental tissue was applied in cases of fistula, and an oily extract of placenta or placental ointment was applied on ulcers and wounds. The results were excellent in most of the cases. There was complete healing in 83 per cent of the cases of gastrointestinal fistula, in 37 per cent of the cases of urogenital fistula, in 85 per cent of the cases of varicose ulcer and in 100 per cent of the wound cases. The treatment of fecal fistula is longer than that of the other fistulas, but once the closure of the communication with the intestine occurs, the final stage of healing of the fistula is rapid.

First Colombian Congress of Pediatrics.—The First Colombian Congress of Pediatrics, organized by the Society of Pediatrics, met in Bogotá Dec. 3-9, 1950. A group of pediatricians from Venezuela, Argentina, Ecuador and Panama and more than 100 delegates from the different departments of the country attended. Prof. Calixto Torres Umaña was president of the congress and Dr. Jorge Camacho Gamba was secretary. The physicians who attended the congress were received as new members of the Colombian Society of Pediatrics. A portrait of Prof. Jorge Bejarano, the former Minister of Hygiene in the Secretary of Social Welfare of Cundinamarca, was unveiled during the session of the congress. Some of the approved proposals which the faculties of medicine urged were increased study of eugenics, establishment of nonobligatory prenuptial medical certificates and adoption of effective measures to decrease infant mortality in the country. The second congress will meet in Medellín in December 1951.

Social Medical Insurance.—The center of Social Medical Insurance of the Instituto Colombiano de Seguros Sociales in the Department of Caldas was opened Feb. 1, 1951. The center includes 62 physicians, 50 nurses, 20 dentists, clinics in the cities of Pereira and Armenia, with 70 and 65 beds respectively, six ambulances and one complete x-ray unit. The administrative personnel includes more than 100 employees. This is the first center of social urban and rural medical insurance. It covers 13 municipalities, which have an average total population of 500,000 persons, 56 per cent in urban districts and 44 per cent in rural districts. It will give medical care to 30,000 affiliated persons, the majority of whom are peasants.

Monument to a Physician.—A monument was recently erected in the house in which Simón Bolívar died on Dec. 17, 1830. This house, known as the San Pedro Alejandrino country house, is in the city of Santa Marta. The monument was erected to the memory of Dr. Alejandro Próspero Reverend, the physician of Simón Bolívar. The monument with the bust of Dr. Reverend is a donation of the Sociedad Bolivariana de Colombia. In 1866, Dr. Reverend published in Paris a book concerning Bolívar. Dr. Reverend died in Santa Marta on Dec. 1, 1881, at the age of 85.

Personal Items.—Dr. Oswald S. Lowsley, the American urologist, came to Bogotá by invitation of the members of the Urological Society of Colombia. He reached Bogotá on January 31 of this year and remained in the city for one week. His program of scientific lectures included new trends in and development of urogenital surgery, large calculus of the ureter, apparatus for temporary substitution of the kidney, transplantation of the ureter and conservative surgery of the kidney. Dr. Lowsley was appointed an honorary member of the Urological Society of Bogotá.

CORRESPONDENCE

POLICE REQUEST HELP

To the Editor:—This department holds a felony warrant, charging murder, for Edgar Alvin (Ted) Werner, 31 years, 6 ft. 1½ in., 197 lb., brown hair, brown eyes, wears horn-rimmed glasses, possibly driving a 1947 Ford sedan coupe, 1951 California license 8-B-76406, engine no. 99A1395880, black, with F.S.C. (Fresno State College) stickers on right wind wing, spotlight and rear view mirror on left side, fog lights and drill guard. He must seek medical aid. He has a spinal cyst that continually drains. He wears a pad to absorb this drainage and uses a rubber pillow in the car. He is accused of killing his wife here by strangulation and inflicting skull fracture by use of a claw hammer.

Mr. Glenn W. Gillette, secretary, Fresno County Medical Society, suggested that we ask your assistance in having this information published in The Journal. I will appreciate anything you can do along the line suggested.

H. R. Morton,
Chief of Police, Fresno, Calif.

INTRA-ARTERIAL TRANSFUSION

To the Editor:—In view of the interest in intra-arterial transfusion, an analysis of the available evidence seems timely. Eagerness to introduce procedures merely because they are new may prove detrimental to patients. It is therefore essential that one examine the facts carefully before drawing conclusions. The only well documented article that I could find on the subject is by Robinson, Trincher and Dennis (*Surg. Gynec. & Obst.* **87**:694, 1948). This article reviews the results of animal experiments and clinical observations on intra-arterial transfusions.

In the animal experiments, only nine animals were used, all of which were bled, and later given transfusions with their own blood, five by the intra-arterial route and four by the intravenous route. All nine animals survived, though one who had received an intra-arterial transfusion died of distemper two days later. The authors point out that the recovery time after intra-arterial transfusion ranged from four to 10 minutes, in contrast to intravenous transfusion, where recovery took 18 to 38 minutes. Moreover, the blood pressure attained higher levels after intra-arterial transfusion.

These experiments have the fallacy that there was a difference not only in the route of transfusion but also in the rate of blood injection. While the intra-arterial transfusions were given at a rate of 100 cc. per minute, the intravenous transfusions were given by the drip method at a rate of only 10 to 25 cc. per minute, in order, as the authors claimed, to avoid right heart failure. However, according to our own observations, persons who have just had a hemorrhage can receive blood by vein at greater rates of speed, because in such patients the venous system as well as the arterial tree is relatively empty of blood. Significantly, one of the dogs who was given a rapid intravenous infusion (500 cc. in six minutes) had recovery values closely approximating those of the dogs receiving intra-arterial transfusion.

The clinical data were based on only 12 patients, two of whom died despite the procedure and two of whom died five hours and two days later, respectively, of secondary hemorrhage. A fifth patient again went into shock one hour after the transfusion, and additional arterial and venous transfusions had to be given, after which the patient recovered. In defense of the method, one might argue that all the patients were in desperate condition, arterial transfusion having been started after venous transfusions had been supposedly ineffectual. When one examines the data, however, one finds that the amount of blood infused ranged from 250 to 1,500 cc., the rate of infusion ranging from 20 cc. to 50 cc. per minute. We have just pointed out the importance of replacement of the blood lost as rapidly as possible. By the intravenous route unmodified blood has been infused as rapidly as 500 cc. in three to five minutes by the syringe-valve method; this has also been done by inserting a three-way stopcock between the adapter and needle of the intravenous set-up and then pumping in citrated blood. Considering the far slower rates of infusion used by these workers, the results by the intra-arterial method would be expected to be inferior to the results of rapid intravenous transfusions. In addition, it is necessary to sacrifice a radial artery, and, if the procedure is to be repeated, another artery must be found (posterior tibial was used by the authors). This has resulted in some sloughing of the skin. It takes much more skill to cannulate an artery than to cannulate a vein, and in the time lost while setting up an intra-arterial transfusion, more blood could be pumped in by vein; this would be much more beneficial to the patient. Moreover, there is nothing to prevent setting up multiple intravenous transfusions as, indeed, is often done. Finally, pumping blood into the patient by air under pressure exposes the patient to the danger of air embolism; reports of deaths caused in this way have been published. The blood can be pumped in much more safely and efficiently by use of three-way stopcock and the more natural venous route.

In summary, there is no convincing evidence that intra-arterial transfusion is superior to intravenous transfusion; all the supposed beneficial effects can be explained by the greater speed of infusion. In an exsanguinated patient, citrated blood can be given by the intravenous route as rapidly as is necessary and desired by insertion of a three-way stopcock between the cannula and tubing and pumping the blood with a syringe. Intra-arterial transfusion sacrifices important arteries with resultant sloughing of the skin and is not readily repeated, and the greater time and skill required to set one up entails a loss of time that jeopardizes the patient's life. Pumping in blood by air under pressure is to be condemned because of the danger of air embolism, and deaths have been reported in the literature because of this. All methods of transfusion are futile unless the surgeon succeeds in controlling the hemorrhage. There is need for additional, carefully controlled animal experiments on intra-arterial transfusion.

Alexander S. Wiener, M.D.,
64 Rutland Road, Brooklyn 25.

BUREAU OF LEGAL MEDICINE AND LEGISLATION

MEDICOLEGAL ABSTRACTS

Hospitals for Profit: Liability for Nurse's Negligence During Operation.—This was an action for damages against the defendant hospital and a surgeon for injuries caused by the alleged negligence of a nurse, hired by the hospital, who assisted at an operation. The court dismissed the complaint against the surgeon but judgment was entered in favor of the plaintiff and against the hospital. Accordingly the hospital appealed to the supreme court, appellate division, first department, New York.

The plaintiff was a paying patient in defendant's private hospital which was concededly operated for profit. During an operation for the removal of an anal fistula, the plaintiff was severely burned by an electric plate which was connected with, and operated, the electro cautery knife used by the operating surgeon. Before the operation, the negative electric plate was prepared and applied under the plaintiff's body by a regular nurse of the hospital designated for the purpose by the hospital's supervisory nurse. The negative electric plate was a part of a Bove electro surgical machine which was part of the hospital equipment. The surgeon, in reserving a room for the plaintiff, had specified that he wished to make use of such a machine during the operation to be performed upon her.

The negative plate is a flat plate of malleable metal heavier than ordinary tin foil attached to which is a wire connected to the negative part of the machine. To apply the plate properly without danger of burning the patient, the plate itself must be smooth and clean and must be applied to the body with an electrolyte, in this case a current-conducting jelly which is placed on the plate in contact with the patient's body. The plaintiff's family doctor, who assisted at the operation, testified that the plate must be applied completely so that the whole surface touches the body evenly; otherwise there may be small areas not touching the body and in and around such areas electric current is concentrated and may produce burns. The plate is first placed by the nurse on the operating table and the patient put on top of the plate; the weight of the body comes down on the plate and preserves contact; the plate is usually applied by nurses as a routine matter before the doctor enters the operating room and it was so applied in this case by the hospital nurse. The current passes through a positive electrode which does the cutting; the positive pole or cutting device in the surgeon's hand is a fine wire which gets heated and cuts and coagulates but won't cut unless the negative pole is under the patient. The doctor who is to operate relies on the nursing personnel of the hospital to put the machine and plates in place before he starts the operation.

In this case the patient was unconscious during the operation. Some time after the operation was completed, it was ascertained that the plaintiff had sustained severe burns on that part of the body with which the plate had been in contact. The operating surgeon testified that it was faulty contact with the patient's body that produced the burns.

The sole issue to be decided by this case, said the appellate division, is the immunity of a private non-charitable hospital, organized and conducted for profit, for the negligent act of one of its regular nurses in connection with the medical treatment of the patient.

The appellate division cited with approval the decision of the Court of Appeals of New York in the case of Schloendorff v. Society New York Hospital, 211 N. Y. 125. In that case, the defendant was a charitable non-profit hospital, but the Court of Appeals speaking through Justice Cardozo, held that the true ground for the hospital's exemption was that the relation between a hospital and its physicians is not that of master and servant; it applied the same rule to nurses saying "It is true, I think, of nurses, as of physicians, that in treating a patient, they are not acting as the servants of the hospital. The superintendent is a servant of the hospital; the assistant superintendents, the orderlies, and the other members of the administrative staff are servants of the hospital. But nurses are employed to carry out the orders of the physicians, to whose authority they are subject. The hospital undertakes to procure for the patient the services of a nurse. It does not undertake, through the agency of nurses, to render those services itself. The reported cases make no distinction in that respect between the position of a nurse and that of a physician; and none is justified in principle." In language especially applicable to the present case, in which the accident happened by reason of the acts of preparation by the nurse immediately preceding the operation, Justice Cardozo, in the Schloendorff case, added: "The acts of preparation immediately preceding the operation are necessary to its successful performance, and are really part of the operation itself. They are not different in that respect from the administration of the ether. Whatever the nurse does in those preliminary stages is done, not as the servant of the hospital, but in the course of the treatment of the patient, as the delegate of the surgeon to whose orders she is subject. The hospital is not chargeable with her knowledge that the operation is improper any more than with the surgeon's." The appellate division therefore concluded that until the Court of Appeals expressly holds otherwise, it should follow the rule that a hospital whether charitable or private is immune from liability by reason of the negligence of a doctor or a nurse with respect to matters relating to the patient's medical care and attention. Accordingly the judgment in favor of the plaintiff and against the hospital was reversed.—*Bakal v. University Heights Sanitarium, 101 N.Y.S. (2d) 385 (New York 1950).*

MEDICAL MOTION PICTURES

See Better: Healthy Eyes: 16 mm., black and white, sound, showing time 11 minutes. Educational Collaborator, Derrick Vail, M.D., Chairman, Department of Ophthalmology, Northwestern University Medical School. Produced in 1950 by and procurable on rental or purchase from Coronet Films, 65 East South Water Street, Chicago 1.

This is an overview film which shows the construction of the eye, describes briefly the various parts and illustrates the values of good vision in the classroom. Following this, there is a description of good health and safety habits in connection with the maintenance and preservation of good vision. The advantages of medical care and frequent examination of the eye are pointed out without the description of qualifications and limitations of professional beliefs. Motivation is the primary development in the theme of the advantages and fun of having healthy eyes.

Some parts of the film are described so fast that it is difficult to understand, but it is assumed that these sequences would be elaborated on by the teacher. The film is intended primarily for intermediate grades but also may be used for good teaching below and above this level. The photography and narration are very well done.

Congenital Pulmonary Stenosis with Intact Interventricular Septum: 16 mm., color, silent, showing time 24 minutes. Prepared by Willis J. Potts, M.D., William L. Riker, M.D., and Stanley Gibson, M.D., The Children's Memorial Hospital, Chicago. Produced in 1950 by and procurable on rental from Mervin W. LaRue, Inc., 159 East Chicago Avenue, Chicago 11.

This motion picture deals with the diagnosis and treatment of congenital pulmonary valvular stenosis with intact interventricular septum. The captions are good, the operative exposure is adequate and the photography is excellent. The operative approach to the valve is through an incision in the right ventricle. The use of a new type of knife and dilator is demonstrated. Two operations are pictured, one on an adult, and the other on an infant. This motion picture is recommended to those interested in the diagnosis and treatment of valvular pulmonic stenosis.

MEDICAL LITERATURE ABSTRACTS

AMERICAN

A.M.A. Arch. Ophthalmology, Chicago

45:125-238 (Feb.) 1951

*Surgery of Lens in Infancy and Childhood. P. A. Chandler.—p. 125.
Glycolytic Activity of Cornea. A. de Roetth Jr.—p. 139.
Experimental Studies on Early Lens Changes After Roentgen Irradiation: I. Morphological and Cytochemical Changes. L. von Sallmann.—p. 149.
Corneal Ulcer Produced by Aerobacter Aerogenes. G. Clark and D. Locatcher-Khorazo.—p. 165.
Preliminary Note on Study of Refractive State, with Special Reference to Myopia. G. S. Pendse, V. M. Dan De Kar and L. S. Bhave.—p. 168.
Development of Electro-Oculography: Standing Potential of Eye in Registration of Eye Movement. E. Marg.—p. 169.
Tropophorometer: Instrument Employing New System of Coordinates for More Accurate Measurements of Heterophoria and Heterotropia. O. A. Putnam and J. V. D. Quereau.—p. 186.
Cornea and Sclera: Review of Literature. M. L. Berliner.—p. 196.

Lens Surgery in Infancy and Childhood.—Disorders of the lens that may require surgical treatment in infancy and childhood include (1) congenital cataract, (2) traumatic cataract, (3) cataract associated with uveitis, (4) congenital dislocation of the lens and (5) microphakia or spherophakia. In congenital cataract operation is indicated if there is extensive involvement of both eyes. If vision is 20/50 or better in one or both eyes when the pupil is contracted, operation is usually not necessary. In borderline cases surgical treatment should be postponed until the child is 5 years old or more, so that one may do accurate refraction to determine whether vision is actually below the critical level. In traumatic cataract of childhood surgery need not be done immediately unless severe glaucoma develops. In many cases the lens will be completely absorbed in two or three months without interference. In cataract associated with uveitis operation is usually eventually necessary but should not be undertaken until the uveitis has been rather quiescent for a long period. In congenital dislocation of the lens and in microphakia or spherophakia operation should be postponed until the age of 5 or 6 years, when accurate refraction can be done. If vision is 20/70 or less the lens should be removed. The choice of operative procedure and methods for the avoidance of complications are discussed by the author.

A.M.A. Arch. Otolaryngology, Chicago

53:129-242 (Feb.) 1951

Signs, Emblems and Symbols of Choice in Plotting Threshold Audiograms. E. P. Fowler.—p. 129.
*Hearing and Speech Problems in Children: Observations and Use of Electroencephalography. R. E. Marcus.—p. 134.
Cholesteatomatous Cysts Secondary to Incomplete Removal of Cholesteatomatous Matrix. J. W. Begley Jr. and H. L. Williams.—p. 147.
Radiocobalt in Otolaryngology. L. F. Morrison.—p. 153.
*Tonsillectomy and Adenoidectomy and Poliomyelitis A. H. Miller.—p. 160.
Structure and Function of Lamina Propria of Tympanic Membrane in Various Mammals. U. Secondi.—p. 170.
Psychophysiology of Speech Hearing. M. Saltzman and M. S. Ersner.—p. 182.
Unilateral Pansinal Mucocele Simulating Malignant Neoplasm: Report of Case. W. P. Anthony and H. L. Williams.—p. 189.
Paranasal Sinuses. S. Salinger.—p. 200.

Electroencephalography in Deafness.—The diagnosis of hearing loss in the very young child is a formidable problem. The audiometer cannot be used in the usual manner, and head-turning responses of the child to loud sounds are unreliable, since they may be only coincidental. Nevertheless, it is important to detect any existing hearing defect before the age of 3 so that the child's early social development will not be retarded. One solution to this problem is the use of electroencephalography as an objective measure of auditory perception. The test is based on the fact that during sleep any sensory stimulation changes the brain wave rhythm from a "sleeping" to a "waking" pattern. The test can be performed during the afternoon nap or early in the evening, with mild sedation if necessary. A very deep sleep is not desirable, since this produces an extremely high threshold for all stimulation. After establishing a base line recording of the brain wave pattern, the examiner employs a standard series of sound stimuli. An arousal reaction, as indicated by a change in the wave pattern, is regarded as evidence of hearing perception. Electroencephalographic testing has the additional advantage of simultaneously revealing evidence of intracranial disorder, often in the temporal lobes, that explains the hearing loss and differentiates it from loss due to cochlear disease. Such evidence of intracranial disorder was found in the author's clinic in 19 of 53 children with severe hearing loss and in nine of 18 children with moderate hearing loss who had retarded or unintelligible speech. Many of the children in this study showed other clinical abnormalities, such as disorders of gait, slowed development, behavioral disturbances and strabismus. Factors of etiological significance included rubella in the mother during the first trimester of pregnancy, Rh blood type incompatibility, prematurity, twinning and brain injury at birth. Consanguinity, heredity and syphilis were not of importance in this series.

Tonsillectomy and Poliomyelitis.—The 1,229 cases of poliomyelitis occurring in Los Angeles County during the epidemic year 1949 were surveyed for determination of a possible relationship between a recent tonsillectomy and adenoidectomy operation and (1) the incidence of poliomyelitis and (2) the development of bulbar poliomyelitis. The authors hoped to determine whether the performing of tonsillectomies and adenoidectomies should be discontinued during the summer months of highest poliomyelitis incidence. The results of the statistical analysis indicate no significant deviation between the actual and the expected incidence of poliomyelitis developing in Los Angeles County during 1949 in patients having recently undergone tonsillectomy and adenoidectomy, even in the period of July through October. In view of these observations, there seems to have been no reason for discontinuance of these operations during the summer months.

American Heart Journal, St. Louis

41:1-160 (Jan.) 1951

Hydraulic Formula for Calculation of Area of Stenotic Mitral Valve, Other Cardiac Valves, and Central Circulatory Shunts. I. R. Gorlin and S. G. Gorlin.—p. 1.
Studies of Circulatory Dynamics in Mitral Stenosis: II. Altered Dynamics at Rest. R. Gorlin, F. W. Haynes, W. T. Goodale and others.—p. 30.
Critical Rates in Ventricular Conduction: II. Simulation of Localized Bundle Branch Block. H. Vesell.—p. 46.
Depression of Cardiac Pacemakers by Premature Impulses. A. Pick, R. Langendorf and L. N. Katz.—p. 49.
Factors Influencing T Wave of Electrocardiogram: II. Effects of Drinking Iced Water. C. V. Dowling and H. K. Hellerstein.—p. 58.
Q-T Interval of Electrocardiogram in Acute Myocarditis in Adults with Autopsy Correlation. I. W. Gittleman, M. C. Thorner and G. C. Griffith.—p. 78.
Unipolar Electrocardiogram in Normal Infants and Children. P. N. G. Yu, H. A. Joos and C. P. Katsampes.—p. 91.
Study of Augmented Unipolar Extremity Leads With and Without 5,000 Ohm Resistances in 500 Consecutive Unselected Patients. H. I. Griffeath and M. Sokolow.—p. 105.
Effect of Digitoxin on V Leads. R. Beers, W. Regan and J. Jensen.—p. 115.
Report on New Mercurial Diuretic, Cumertilin, Brand of Mercumatilin. L. H. Sigler and J. Tulgan.—p. 125.
*Congenital Tricuspid Atresia. S. C. Sommers and J. M. Johnson.—p. 130.

Congenital Tricuspid Atresia.—Primary isolated tricuspid atresia is characterized by the absence of a right atrioventricular opening with associated interauricular and interventricular septal defects. Hypoplasia of the right ventricle is a constant finding.

The Association library lends periodicals to members of the Association and to individual subscribers in Continental United States and Canada for a period of five days. Three journals may be borrowed at a time. Periodicals are available from 1940 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted.

At Henry Ford Hospital, six instances of isolated tricuspid atresia were encountered in 141 autopsies on persons with congenital heart disease. The authors describe these six fatal cases and review 31 similar cases that they collected from the literature. An abnormal superior vena cava, a right atrial Chiari's network or both were found in the six patients. The characteristic clinical findings of cyanosis and electrocardiographic left axis deviation aid in the diagnosis. Most patients die before 1 year of age because of congestive heart failure and anoxia. Tricuspid atresia may be explained mechanically by the presence of abnormal blood currents in the primitive right atrium, which allow the tricuspid ostium to close. Surgical enlargement of the associated interauricular septal defect and creation of a systemic-to-pulmonary arterial shunt are proposed as a possible means of prolonging the life of these patients.

American Journal of Medical Sciences, Philadelphia

221:121-230 (Feb.) 1951

Observations on Eosinophil Count in Man: Proposed Test of Adrenal Cortical Function. B. Fisher and E. R. Fisher.—p. 121.
Massive Doses of Amphetamine as Adjuvant in Treatment of Barbiturate Intoxication. H. A. Friedman and S. C. Harris.—p. 133.
Bromosulfalein Liver Function Test with Special Reference to Renal Excretion. J. W. Norcross, R. M. White and R. F. Bradley, Jr. —p. 137.
Measurement of Serum Cholinesterase Activity: Useful Test in Management of Acute Hepatitis. L. J. Vorhaus, H. H. Scudamore and R. M. Kark.—p. 140.
*Streptomycin Para-Aminosalicylate and Streptomycin Resistant Tubercle Bacilli. J. D. Adcock, W. F. Fidler, W. A. Meier and C. R. Owen. —p. 149.
*Cold Agglutinins: VII. Tests for Cold Isohemagglutinins in Pneumonia and Other Acute Respiratory Infections over Four-Year Period. M. Finland and M. W. Barnes.—p. 152.
Splenomegaly in Thrombocytopenic Purpura. L. Ehrlich and S. O. Schwartz.—p. 158.
Therapeutic Suppression of Tissue Reactivity: I. Comparison of Effects of Cortisone and Aminopterin. R. Gubner.—p. 169.
Therapeutic Suppression of Tissue Reactivity: II. Effect of Aminopterin in Rheumatoid Arthritis and Psoriasis. R. Gubner, S. August and V. Ginsberg.—p. 176.
Alteration in Blood Proteins in Rheumatic Patients. J. S. Browning, R. Rice and C. Ulrich.—p. 183.
Clinical Observations on Effects of Injectable Rutin, Esculin, Adrenoxyl and Vitamin E on Capillary Fragility of Diabetic Retinopathy. B. A. Levitan.—p. 185.
Effect of Aureomycin and Flavonoid Rutin on Splenectomized Rat. P. E. Rekers and N. Marti.—p. 191.
Effect of Aureomycin upon Hodgkin's Disease. R. Goldman.—p. 195.
New Diagram for Visualization and Interpretation of Acid-Base Changes. R. B. Singer.—p. 199.
Ocular Manifestations of Diffuse Collagen Diseases. R. W. Hollenhorst and J. W. Henderson.—p. 211.
Problem of Extensive Cutaneous Burns. J. M. Walker.—p. 223.

Streptomycin Paraaminosalicylate and Streptomycin-Resistant Tubercle Bacilli.—This report is concerned with the effect of streptomycin paraaminosalicylate on streptomycin-resistant organisms in 12 patients with far advanced pulmonary tuberculosis. None of the patients had received streptomycin or paraaminosalicylic acid previously. The equivalent of 0.5 Gm. of streptomycin (0.4 Gm. of paraaminosalicylic acid) was administered intramuscularly twice daily. Tubercle bacilli were isolated from sputum and/or gastric contents on Petragnani's medium. The sensitivity of strains obtained before and during the course of therapy were determined both in Dubos liquid medium and Herrold egg yolk agar. The following concentrations of streptomycin were added to each type of medium: 0 (control), 1.0, 5.0, 10, 20 and 100 micrograms per milliliter of medium. The sensitivity of the strain under study was considered to be the lowest concentration of streptomycin that gave complete suppression of growth (no colonies or gross turbidity) after 14 days of incubation. The sensitivities of the organisms to paraaminosalicylic acid were determined in a similar manner, with egg yolk agars alone. Strains were considered to be significantly resistant when any appreciable amount of growth appeared on plates containing streptomycin in concentrations of 100 micrograms per milliliter of medium. Paraaminosalicylate had no delaying effect on the accumulation of streptomycin-resistant organisms in the 12 patients reported on in this study. The incidence and rate of appearance of streptomycin-resistant strains of tubercle bacilli were such that the authors concluded that paraaminosalicylate is ineffective in delaying the accumulation of streptomycin-resistant organisms in advanced pulmonary tuberculosis.

Cold Agglutinins.—Over a four year period tests for cold agglutinins were performed on the serums of 756 patients with acute respiratory infections involving the lungs and tracheobronchial tree. Positive results occurred as frequently in patients from whom a single specimen was obtained during convalescence as in those from whom specimens were obtained during both the acute and convalescent phase of the disease. Significant titers of cold agglutinins were found associated only with primary atypical pneumonia and not with other acute respiratory infections. Occasionally, cold agglutinins were found in patients with other infections, but in every case there was evidence that these infections were complicated by underlying primary atypical pneumonia. No patient with uncomplicated bacterial or influenzal pneumonia was found to have cold agglutinins. Not all patients with uncomplicated primary atypical pneumonia had significant titers of cold agglutinins, however. In a series of 40 patients, only 75 per cent showed positive reactions to the test. The seasonal incidence of primary atypical pneumonia, as reflected in the frequency with which positive reactions for cold agglutinins appeared, followed a definite pattern throughout the period of this study. The disease had a high incidence during the summer, reached its peak in the autumn, dropped to or below the summer level during the winter and had its lowest incidence in the spring.

American Journal of Ophthalmology, Chicago

34:1-168 (Jan.) 1951

*Retrolental Fibroplasia. A. B. Reese and F. C. Blodi.—p. 1.
Neutron Cataracts. A. C. Krause and J. O. Bond—p. 25.
Healing of Incisions for Cataract Extraction. J. H. Dunnington.—p. 36.
Herpes Zoster Ophthalmicus with Bilateral Hemorrhagic Retinopathy. R. E. Bartlett, C. S. Mumma and A. R. Irvine.—p. 45.
Osteoma of Orbit. A. B. Rizzuti.—p. 49.
Cycloelectrolysis for Glaucoma. C. Berens, L. B. Sheppard and A. B. Duel Jr.—p. 53.
Chronic Simple Glaucoma in the Negro. S. S. McNair.—p. 70.
Differentiation of Phi Phenomenon and Parallax: Use of Phi Phenomenon in Determination of Retinal Correspondence. D. A. Franklin.—p. 77.
Eliminating Distortion Due to Prisms in Glasses. P. W. Miles.—p. 87.
Venous Aneurysms of Orbit. R. E. Teitgen and W. L. Benedict.—p. 94.

Retrolental Fibroplasia.—After discussing the acute and cicatricial phases of retrolental fibroplasia, its relationship to hemangiomas and the systemic nature of the disease, Reese and Blodi review the results of microscopic examinations on the eyes of 79 premature infants who were dead at birth or died shortly thereafter. Following this they review the treatment of retrolental fibroplasia. For the cicatricial stage they used a surgical procedure. The results obtained are discussed. For the acute phase they used two therapeutic agents: vitamin E and pituitary adrenocorticotropic hormone. The theory that retrolental fibroplasia is the result of vitamin E deficiency had to be abandoned. When it was found that retrolental fibroplasia occurred with the same frequency in two series of patients, one treated with vitamin E and the other untreated, and when retrolental fibroplasia developed in one of identical twins who received vitamin E and the other remained normal without it, the authors discontinued the use of the vitamin and tried pituitary adrenocorticotropic hormone. They explain the rationale for this treatment and say that treatment with pituitary adrenocorticotropic hormone should be instituted only when there are signs of rapid progression, such as retinal edema or retinal detachment. Dilatation and tortuosity of the retinal vessels and fundus hemorrhages are not sufficient indications for starting this treatment. Between 20 and 25 mg. of pituitary adrenocorticotropic hormone are administered each day for 14 days. A second course was given in two cases in which the disease became reactivated after cessation of treatment. In all the 14 babies treated with pituitary adrenocorticotropic hormone the retrolental process has been arrested or has regressed. Some of the treated infants now have normal fundi; others have a small mass of white tissue far in the periphery of the fundus. During the same period eight infants with progressive retrolental fibroplasia did not receive pituitary adrenocorticotropic hormone. Three of these now have complete bilateral membranes, three have partial membranes and two have small masses of white tissue in the periphery of the fundi.

American Journal of Physiology, Baltimore

164:1-300 (Jan.) 1951. Partial Index

Distribution, Exchange and Migration of Phosphate Compounds in Nervous System. A. J. Samuels, L. L. Boyarsky, R. W. Gerard and others.—p. 1.
Rat Electrocorticogram in Relation to Adrenal Cortical Function. J. R. Bergen.—p. 16.
Effect of Adrenal Hormones on Blood Phospholipides. D. B. Zilversmit, T. N. Stern and R. R. Overman.—p. 31.
Uptake and Conversion of Radioactive Iodine (I^{131}) by Thyroid Gland in Vivo and in Vitro in Tourniquet Shock in Rats. M. W. Hamolsky, Z. S. Gierlach and H. Jensen.—p. 35.
Arterial Pressure and Serum Protein Patterns in Adrenalectomized Hypertensive and Adrenalectomized Normotensive Dogs. I. H. Page and L. A. Lewis.—p. 61.
Experimental Hypertension. J. Allardyce, J. Salter and R. Rixon.—p. 68.
Studies on Salt Hypertension: Effects of Adrenalectomy and Nephrectomy. W. L. Brandt, W. M. Dubin and L. A. Sapirstein.—p. 73.
Reactions of Surviving Human Umbilical Arteries to 1-Epinephrine, 1-Norepinephrine, Acetylcholine and Histamine. D. J. Smith.—p. 86.
Co-Thromboplastin, Probable Factor in Coagulation of Blood. F. D. Mann and M. Hurn.—p. 105.
Effect of Removal of Liver on Blood Coagulation. F. D. Mann, E. S. Shonyo and F. C. Mann.—p. 111.
Influence of Cirrhosis on Proteins of Cisternal Lymph. J. T. Nix, E. V. Flock and J. L. Bollman.—p. 117.
Influence of Previous Dietary Protein and of ACTH on Blood Glucose Concentration of Fasting Rats. P. Handler and R. S. Georgiade.—p. 131.
Urinary Excretion of Sodium and Chloride After Splanchnicotomy: Effect on Proximal Tubule. S. A. Kaplan and S. Rapoport.—p. 175.
Glucose Utilization by Extra-Hepatic Tissues. D. R. Drury, A. N. Wick, R. W. Bancroft and E. M. MacKay.—p. 207.
Inhibition of Uptake of Radioactive Phosphate by Human Erythrocytes in Vitro. D. R. H. Gourley.—p. 213.
Rate of Absorption of Cobalt from Peritoneal Cavity and Rate of Elimination from Blood. N. I. Berlin and W. Siri.—p. 221.
Influence of Carotid Body Removal on Polycythemia and Arterial Oxygen Saturation During Discontinuous Anoxia. W. C. Grant.—p. 226.
Acute Cor Pulmonale: Experimental Study Utilizing Special Cardiac Catheter. C. T. Dotter and D. S. Lukas.—p. 254.

American Journal of Public Health, New York

41:1-138 (Jan.) 1951. Partial Index

Sanitation in International Health Field. H. van Zile Hyde.—p. 1.
Medical Care Insurance: Lessons from Voluntary and Compulsory Plans. Organization and Administration. F. Goldman.—p. 20.
Air Pollution—the Status Today. A. C. Stern and L. Greenberg.—p. 27.
Survival of Selected Enteric Organisms in Various Types of Soil. W. L. Mallmann and W. Litsky.—p. 38.
Use of Statistics on Prematurity in Tennessee. R. H. Hutcheson and R. R. Puffer.—p. 49.
Current Practices and Trends in Child Health Conference. S. M. Wishik.—p. 57.
Physician Participation in School Health Services: Report on Analysis of Questionnaire to Medical Societies on Physicians and Schools. R. V. Hein and D. A. Dukelow.—p. 66.
*Some Factors in Epidemiology of Histoplasmin Sensitivity in Williamson County, Tennessee. L. D. Zeidberg, A. Dillon and R. S. Gass.—p. 80.

Histoplasmin Sensitivity.—In the five year period ending July 1950, tests with histoplasmin were made of persons of all ages in Williamson County, Tenn. Positive reactions occurred in 25 per cent of those under 1 year of age then rose abruptly with age to a peak of 87 per cent in those 10 to 14 years of age. After the age of 15, the proportion of positive reactors declined steadily. At an average interval of 25 months, 506 persons who had had positive reactions to the first test were retested. Of this number, 15.8 per cent had reverted to negative by the time of the second test. Reversion rates were highest in those under 1 year of age and in those 40 years of age and over. Seasonal variation in allergy was studied only in children under 5 years of age. In this group histoplasmin sensitivity appeared to be at its lowest level in the winter and early spring. The percentage of positive reactions rose during the summer to a peak in the fall and then declined. Epidemiological investigation of 271 homes in which at least one child under 5 years of age had been tested revealed an association between positive reaction and dampness of the environment. Some explanations are offered for the described observations.

Bulletin of Johns Hopkins Hospital, Baltimore

88:119-196 (Feb.) 1951

Some Biological Implications of Studies on Influenza Viruses. F. M. Burnet.—p. 119.
Certain Aspects of Pharmacology of 3-Hydroxycinchoninic Acid. K. C. Blanchard, E. H. Dearborn and E. K. Marshall Jr.—p. 181.

Connecticut State Medical Journal, Hartford

15:99-184 (Feb.) 1951

Health Legislation and Shortage of Physicians. W. C. Davison.—p. 99.
Cancer of Stomach. L. G. Simon, A. R. Small and T. Najm.—p. 105.
Surgery in Treatment of Peptic Ulcer. W. M. Edmondstone.—p. 107.
Neurology and Physiology in Functional States. G. A. Gosselin.—p. 109.
Aureomycin in Treatment of Mumps Orchitis and Encephalitis. N. P. R. Spinelli, N. L. Cressy and P. Kunkel.—p. 113.
*Old Age and Employability. S. S. Levine.—p. 117.

Old Age and Employability.—As long as we retire the aged worker while he still possesses skill, experience, physical capacities and a desire to work we are adding to the economic burden of the younger generation and to the decline of society. The life span is increasing and aging occurs at a slower pace. Early retirement means an unnecessary waste of valuable skills and experiences. Longevity without work invites disease. The aged worker needs a feeling of economic security and of being an active member in the life of his community. During World War II, when employers were obliged to recall older workers, it was learned how much physical skill and mental ability had been wasted during previous years when many of these same workers had been retired or discharged. The author feels that old age is the problem of society as a whole.

Gastroenterology, Baltimore

17:1-132 (Jan.) 1951

Evaluation of Subtotal Gastrectomy for Gastric and Duodenal Lesions: Postoperative Survey of 100 Cases. L. Singmaster and G. C. Engel.—p. 1.
*Vagotomy as Treatment for Marginal Ulcer. G. Crile Jr. and G. M. Brown Jr.—p. 14.
Affective Response of Patient with Chronic Ulcerative Colitis to Cortisone. T. E. McKell, S. W. Tuthill and A. J. Sullivan.—p. 20.
Effect of ACTH on Nonspecific Ulcerative Colitis. H. R. Rossmiller, C. H. Brown and J. A. Ecker.—p. 25.
Relationship of Biliary Tract Disorders to Migraine. J. R. Twiss, A. R. Aronson and C. O. Fiertz.—p. 28.
*Enterogastrone Parenterally in Treatment of Peptic Ulcer: Controlled Clinical Study. F. C. Bone, C. Cassel, J. M. Ruffin and R. J. Reeves.—p. 35.
Atypical Hepatic Cirrhosis with Angiomatous Change: Report of Case. W. E. Ricketts and J. W. Greene.—p. 39.
Clinical Course of Hepatitis. H. Ducci, R. Barahona and J. Barzelatto.—p. 45.
Technical Factors Affecting Estimation of Serum Gamma Globulin by Zinc Turbidimetric Method of Kunkel. M. H. Friedman.—p. 57.
Intravenous Glucose Tolerance Before and After Vagotomy for Peptic Ulcer. G. F. Adams.—p. 63.
Gastric Secretion and Motility in Dogs Post-Vagotomy—Two Years Studies. W. R. Deaton Jr., R. W. Postlethwait and H. H. Bradshaw.—p. 72.

Vagotomy for Marginal Ulcer.—Thirty-nine patients with a diagnosis of marginal ulcer have been subjected to vagotomy at the Cleveland Clinic during the past four years. Thirty-six have been followed from six to 44 months, the average duration of follow-up being 23 months. There were no operative or hospital deaths. In five patients who had symptoms suggestive of marginal ulcer but no objective evidence of this condition the results were poor. It was concluded that the original symptoms in these patients were functional in origin. Good results were obtained in 26 of 31 patients with objective evidence of marginal ulcer. Two patients who were improved following treatment now have no evidence of marginal ulcer but continue to have some atypical abdominal distress. In two there have been symptoms suggesting recurrent ulceration, but an ulcer cannot be demonstrated. In one case a marginal ulcer recurred and required a second operation. In gastrojejunocolic fistula, vagotomy coupled with simple repair of the fistula or occasionally combined with gastric resection has proved to be a safe and satisfactory method of treatment. Since results of vagotomy in the treatment of marginal ulcer are at least comparable to those following extensive gastric resection, its safety commends it as a standard treatment of marginal ulcer occurring after either gastric resection or gastroenterostomy.

Enterogastrone in Peptic Ulcer.—Evidence concerning the value of enterogastrone is conflicting. In an attempt to determine the effectiveness of enterogastrone in peptic ulcer, the authors studied 36 patients with typical history of peptic ulcer. Only severe cases in which there had been no response to adequate medical treatment were selected. Every patient was considered a candidate for operation, and all had had chronic, recurrent ulcer for at

least two years, with an average duration of 11 years. Each had a minimum of two recurrences in the preceding 12 months, and all had active ulcer symptoms at the beginning of the study. Many of the patients had had complications of ulcer in the past: 17 had had at least one hemorrhage; three had been operated on for perforation, and two had had gastroenterostomies. Prior to the institution of therapy 33 of the 36 patients had roentgen evidence of ulcer. Each of the three remaining patients had typical ulcer histories. Of the 36 patients, 20 were given enterogastrone, the other 16 a placebo. Those conducting the study did not know which was enterogastrone and which the placebo until the final results had been evaluated. Similar results were obtained in both groups. Slightly over half of each group improved during the treatment period, and the majority lapsed into the pretreatment state when the preparations were discontinued. No significant difference in roentgen findings, gastric acidity or volume of secretion was found between the enterogastrone and the control group. It was concluded that the preparation of enterogastrone used in this study is ineffective in the treatment of patients with peptic ulcer.

Journal of International College of Surgeons, Chicago

15:111-252 (Feb.) 1951

Gravitational Leg Ulcers and Allied States. H. Kelikian.—p. 111.
*Chronic Arteriomesenteric Duodenal Ileus. D. Telford.—p. 129.
Lipoma of Colon Simulating Carcinoma. H. E. Bacon and J. Laurens. —p. 136.
*Barium Modification with Methocel in Diagnosis of Bowel Lesions. M. M. Marks.—p. 143.
Acute Pancreatitis. J. G. Probstein.—p. 147.
*Impending Death Under Anesthesia. M. Thorek.—p. 152.
Stainless Steel Cranioplasty. M. Scott and H. T. Wycis.—p. 161.
Education of Biliary Surgeon. N. W. Thiessen.—p. 172.
Thrombocytopenia Purpura: Review of 53 Cases. M. Behrend, A. Behrend, M. Brylawski and I. Woldow.—p. 176.
Transplantation of Psoas Muscle in Correction of Urinary Incontinence. F. Stefani.—p. 180.
Cooper Ligament Operation for Inguinal Hernia. L. F. Watson.—p. 184.
Impacted Fractures of Neck of Femur. G. J. Garceau and H. W. Sigmond.—p. 188.
Some Simple Thoracic Emergencies. T. J. Kinsella.—p. 194.
Thermal and Fluid Therapy of Atomic Bombing Injuries. F. M. Allen. —p. 201.
Obstructive Jaundice Due to Benign Tumor of Extrahepatic Bile Ducts: Report of Case. J. Zaslow and R. W. Lorry.—p. 212.
Nephroptosis: Some New Etiologic Conceptions. C. O. Miller.—p. 219.

Arteriomesenteric Ileus.—A survey of hospital records in Vancouver, British Columbia, showed that approximately one patient is operated on every two months in this city for chronic arteriomesenteric ileus (Wilkie's syndrome). The mild form of the disease occurs occasionally and the severe form rarely. The disease is a complication of splanchnoptosis in a great majority of cases; occasionally it is a complication of a congenital anomaly, such as poor mesenteric attachment. Obstruction of the duodenum is caused by a taut arteriomesenteric band compressing the termination of its horizontal part. Diagnosis is suggested by the history, the physical habitus of the patient and the symptoms, but roentgen evidence is essential to the diagnosis. Positive roentgen signs of obstruction are excessive retroperistalsis, stasis and excessive dilatation proximal to the point where the mesenteric root crosses the duodenum. The disease should be classified as mild, moderate or advanced. Treatment of the mild condition is medical; in the moderate type, medical treatment should be tried before surgery is decided on. The advanced condition is best treated surgically. Laparotomy should be performed with thorough exploration, establishment of a duodenojejunostomy and, occasionally, surgical procedures directed toward the cure of concomitant disease, such as peptic ulcer or cholecystitis. The prognosis of chronic arteriomesenteric ileus is usually favorable, if proper treatment is given.

Barium Modification with Methylcellulose (Methocel).—When barium sulfate and 2.5 per cent of methylcellulose (methocel) are well mixed and added to water, a permanent suspension is formed that does not inspissate or form impactions in the bowel. This solution is well tolerated by the digestive tract. The deflocculated barium, because of its more even and finer dispersion, gives greater roentgenologic opacity. This is of particular use in the differentiation of gastric lesions, which sometimes are missed or misinterpreted by roentgen examination. The increased contrast localizes intrinsic bowel lesions. Greater mucosal detail is demonstrated by the use of this mixture, and a third-dimensional effect is obtained when air contrast studies are done. Diverticula are well coated and empty. Malignant invasion of the bowel wall can more easily be demonstrated. Diseased bowel may easily be differentiated from the uninvolved parts and progress followed with greater assurance.

Impending Death Under Anesthesia.—Cardiac and respiratory arrest is a rare complication of the administration of anesthetics, particularly of spinal anesthesia. The increasing use of the latter method makes it imperative for surgeons to be prepared for this emergency. Complete equipment for resuscitation should be at hand, and the entire surgical team should be rehearsed in its use. Even if the abdomen or the thorax has not already been opened, the surgeon is justified in making the opening to reach the heart directly. If the heart has stopped or is fibrillating, the surgeon should begin cardiac massage instantly. Speed is vital. Three methods of manual massage are described: the standard method, using an abdominal approach in the midline from the xiphoid process; Nicholson's method, using a buttonhole incision in the diaphragm, and the intercostal approach of Lampson, which is useful in the treatment of fibrillation when complete arrest has not occurred. The case is reported of a woman aged 23 who was under spinal anesthesia for an appendectomy when cardiac and respiratory arrest occurred before the operation was begun. The diaphragm and pericardium were opened, and cardiac massage was instituted together with intracardiac injections of epinephrine and the use of artificial respiration. The total period of arrest was 19 minutes. Satisfactory activity of the heart having been resumed, appendectomy was performed. The patient remained in deep coma for four days and had a stormy postoperative course but recovered completely and recently gave birth to a healthy infant. This favorable end result is added evidence of the reversibility of cerebral damage resulting from prolonged anoxia. The importance of reflex action through the pathway from the pericardium by way of the phrenic nerve to the superior cervical ganglion is emphasized. Both clinical and experimental data support the concept of a gradient of susceptibility as the neuraxis descends from the cerebral cortex to the spinal cord.

J. Lab. and Clin. Medicine, St. Louis

37:1-164 (Jan.) 1951

The Inquiring Physician. W. W. Spink.—p. 2.
Studies of Coproporphyrin: V. Isomer Distribution and per Diem Excretion of Urinary Coproporphyrin in Cases of Cirrhosis of Liver. C. J. Watson, D. Sutherland and V. Hawkinson.—p. 8.
Id.: VI. Effect of Alcohol on per Diem Excretion and Isomer Distribution of Urinary Coproporphyrins. D. A. Sutherland and C. J. Watson. —p. 29.
Studies of Liver Function Tests: II. Derivation of Correction Allowing Use of Bromosulfalein Test in Jaundiced Patients. L. Zieve, M. Hanson and E. Hill.—p. 40.
Effect of Aureomycin on Urobilinogen Formation and Fecal Flora. V. M. Sborov, A. R. Jay and C. J. Watson.—p. 52.
In Vitro Sensitivity to Eight Antibiotics of Streptococci and Staphylococci Recovered from Cases of Bacterial Endocarditis. M. Hamburger and D. Muething.—p. 60.
Streptomycin-Resistant Coliform Bacilli in Stools of Tuberculous Patients Treated with Intramuscular Streptomycin. M. Hamburger, J. R. Berman, L. Stein and others.—p. 64.
*Primary Pneumococcic Pneumonia at the Cincinnati General Hospital, 1936-1950. R. T. Thompson, J. M. Ruegsegger, M. A. Blankenhorn and M. Hamburger.—p. 75.
Influenza Viral Infections in Boston, September 1937 to August 1949: Study of Serologic Response of Patients and of Antigenic Differences Among Influenza Viruses That Were Isolated. M. Finland, M. W. Barnes and E. B. Wells.—p. 88.
Observations on Epidemiology of Infectious Hepatitis. E. M. Cree and J. W. Brown.—p. 104.
Radioactive Di-Iodo^{131}-Fluorescin: Health Physics Aspects of Its Use for Diagnostic Studies. G. V. LeRoy, W. R. Tweedy and M. Ashkenazy. —p. 122.
pH of Whole Arterial Blood. R. H. Wilson.—p. 129.
Effect of Cortisone in Glomerulonephritis and Nephropathy of Disseminated Lupus Erythematous. B. I. Heller, W. E. Jacobson and J. F. Hammarsten.—p. 133.
Analysis of Normal Guinea Pig Lung for Factors Determining Pulmonary Edema and Congestion. A. Hemingway and G. S. Campbell. —p. 143.

Pneumococcic Pneumonia.—Thompson and associates review observations on 3,205 patients with primary pneumococcic pneumonia treated at the Cincinnati General Hospital from 1936 to 1950. Of these patients, 43.5 per cent were 13 to 39 years old,

35.4 per cent were 40 to 59 years old and 21.0 per cent were 60 years old or older. The annual number of cases decreased from 387 in 1936-1937 to 100 in 1949-1950. The mortality rate was 32.5 per cent during the three year period of serum treatment, 16.9 per cent during the six years of sulfonamide treatment, 13.0 per cent during the two years of combined sulfonamide and penicillin treatment and 8.6 per cent during the three years of penicillin treatment. The mortality of the older patients was greater than that of the middle aged or younger patients. Type 3 caused the greatest number of deaths in each of the first seven years of the study. Type 7 became the most virulent type in the three years after that. Type 1 and type 7 caused an equal number of deaths in 1943-1944, and type 7 led as cause of death in 1944-1945 and 1945-1946. Type 8 caused three deaths in 1946-1947, and, in the last three years, no type was outstanding as a cause of death. Type 1 was the most frequent pneumococcus in eight years; type 7 was most frequent in three years; types 1 and 7 were equally frequent one year, and types 2 and 3 were most frequent one year each. White patients showed a greater mortality than Negro patients. However, this was largely due to the large proportion of white patients in the older age group. The various modes of therapy had no effect on the frequency of pneumococcus bacteremia or purulent complications. Bacteremia occurred in 22.8 per cent of the cases, and purulent complications occurred in 7.1 per cent.

Journal of Thoracic Surgery, St. Louis

21:1-110 (Jan.) 1951

Nonspecific Pneumonitis of Left Upper Lobe (Simulating "Middle Lobe Syndrome" and Producing Early Superior Pulmonary Sulcus Syndrome). W. M. Ashe, J. R. McDonald and O. T. Clagett.—p. 1.
Exfoliative Cytology: Adjunct in Diagnosis of Bronchiogenic Carcinoma. E. Jackson, F. Bertoli and L. V. Ackerman.—p. 7.
Eosinophilic Granuloma of Rib with Case Report. H. A. Kipp and E. R. Fisher.—p. 24.
Congenital Absence of Pericardium: Case Report. B. G. P. Shafiroff.—p. 30.
Resection Versus Thoracoplasty in Treatment of Pulmonary Tuberculosis. A. J. Beatty and W. W. Buckingham.—p. 34.
Blood Volume and Extracellular Fluid in Tuberculosis. E. B. Hay, C. R. Hay and D. E. Jenkins.—p. 42.
*Sudden Death Occurring Immediately After Operation in Patients with Cardiac Disease, with Particular Reference to Role of Aspiration Through Endotracheal Tube and Extubation. H. B. Shumacker Jr. and L. J. Hampton.—p. 48.
*Pneumoperitoneum in Differential Diagnosis of Diaphragmatic Hernia. R. C. Clay and C. R. Hanlon.—p. 57.
*Cartilaginous Tumors of Ribs and Sternum. L. W. O'Neal and L. V. Ackerman.—p. 71.

Sudden Death After Operation.—This report is concerned with five patients who died suddenly after operation. All five operations were performed with the patient under endotracheal anesthesia; intubation was easily carried out and the respirations were assisted by manual compression of the bag. In all the anesthesia was light at the close of the procedure and at the time of the terminal aspiration through the endotracheal tube or extubation. All the patients had cardiac disease. Two had tetralogy of Fallot, one probably a ventricular septal defect and possibly a small patent ductus arteriosus, one a coarctation of the aorta and one auricular fibrillation and myocardial damage. Four of the patients were children, one an adult. Except possibly for the fact that all had myocardial disease or congenital malformation, the most significant factor is that these sudden disastrous changes occurred during suction on a tube passed into the trachea through the endotracheal tube or during extubation. Investigators who demonstrated electrocardiographic changes during endotracheal manipulations attributed these changes to a vagovagal reflex initiated by the mechanical irritation of the respiratory tract. Cardiac arrest has been produced in dogs by vagal stimulation, provided hypoxia existed. These considerations allow at least a tenable hypothesis that aspiration through the intratracheal tube and withdrawal of the tube at the close of the operation might conceivably bring about cardiac arrest by decreased oxygen saturation with resultant increase in susceptibility to vagal reflexes. The authors realize that this problem is not settled but hope that this report may foster a general awareness of it and stimulate investigations on its cause and prevention.

Pneumoperitoneum in Diagnosis of Diaphragmatic Hernia.—Clay and Hanlon used pneumoperitoneum as a diagnostic aid in four cases of diaphragmatic hernia simulating intrathoracic tumor or cyst. The lesions had been detected by routine roentgenography of the chest, and in every instance thoracotomy had been advised as a diagnostic or therapeutic measure. Increasing use of mass radiological surveys has resulted in the detection of numerous asymptomatic thoracic lesions, which present a vexing problem in diagnosis and treatment. Since in many of these lesions thoracotomy is primarily diagnostic, operation could often be avoided if more accurate nonsurgical diagnostic measures were available. In the four cases under discussion there was uncertainty not only as to the nature of the lesion but also as to its position relative to the diaphragm. In these circumstances pneumoperitoneum proved to be a simple and valuable diagnostic maneuver. The authors briefly describe the technique of inducing pneumoperitoneum and present the histories of the four patients. They admit that pneumoperitoneum is not entirely without danger, since fatal air embolism has been known to result from it. This, however, can be avoided, and a carefully performed diagnostic pneumoperitoneum is a relatively safe procedure that may enable one to avoid the hazard and inconvenience of diagnostic thoracotomy.

Cartilaginous Tumors of Ribs and Sternum.—A tabulation of 96 cases of chondroma, osteochondroma and chondrosarcoma of the chest wall includes 11 observed by the authors themselves. This is not a complete review of the literature, the aim being merely to collect enough cases to permit statistical conclusions. The low incidence of these types of tumors is indicated by the numerous authors reporting a single case. Sixty of the tumors in this series, including the 11 cases observed by the authors, had been diagnosed as malignant. The remaining 36 were designated as benign, but the authors believe that many of these were also malignant. Male patients predominated in the group with the malignant chondrosarcomas as well as in the group with the benign chondroma or osteochondroma. A tumor mass was the first symptom in two thirds of the patients. Pain was usually local, pleuritic or neuritic. Roentgenographically, the distinguishing feature of peripheral chondrosarcoma is the presence of large masses arising from bone with irregular spotty flecks of calcification. Central chondrosarcomas are demonstrated as thin-walled cavities near the ends of long bones. Irregular scattered foci of calcification may be seen in the radiolucent cavity. When the thinned-out cortex is perforated, there may be "sun ray" spicules of bone arising from the surface. Most of the tumors, even the malignant ones, are encapsulated to some degree. This encapsulation is treacherous, since when the tumor is enucleated satellite nodules or portions of the malignant perichondrium may be left behind. Preoperative differentiation between benign and malignant cartilaginous tumors cannot be made with certainty. Adequate radical resection of chondrosarcoma arising in ribs and sternum entails removal of a long segment of bone of origin, its periosteum, adjacent muscle, underlying pleura and, usually, adjacent bony structure.

Kentucky Medical Journal, Bowling Green

49:55-96 (Feb.) 1951

Uses and Abuses of Clinical Laboratory. M. C. Darnell.—p. 55.
Accuracy of Diagnosis of Jaundice. S. T. Simmons.—p. 60.
Prostatectomy Today. R. Lich Jr.—p. 63.
Cancer of Oral Cavity. E. B. Mersch.—p. 69.
Bronchiectasis in Childhood. W. J. Temple.—p. 73.

Military Surgeon, Washington, D. C.

108:91-180 (Feb.) 1951. **Partial Index**

Medical Aspects of Military Parachuting. S. H. Neel Jr.—p. 91.
Disease and Command Responsibility. P. H. Long.—p. 106.
Doctors and Defense. J. C. Sargent.—p. 109.
Use of Anticoagulants in Military Medicine. I. S. Wright.—p. 113.
Flight Feeding. B. M. Ryan.—p. 125.

Missouri State Medical Assn. Journal, St. Louis

48:97-160 (Feb.) 1951

Early Diagnosis of Cancer: Biopsy. E. J. Jordan and E. L. Keyes.—p. 97.
Pancreatic Dysfunction and Liver Disease. W. A. Knight Jr., R. O. Muether and V. Moragues.—p. 101.
Treatment of Headache. R. E. Ryan.—p. 106.

Nebraska State Medical Journal, Lincoln

36:37-80 (Feb.) 1951

Chronic Cor Pulmonale. A. Sachs, W. J. Reedy and J. R. Walsh.—p. 39.
Management of Coronary Heart Disease. F. W. Niehaus.—p. 47.
*Clinical Value of Multiple Unipolar Precordial Leads in Diagnosis of Myocardial Infarction. S. Merlis and A. L. Smith.—p. 50.
Myocardial Failure Complicating Pulmonary Insufficiency. J. Ritter. —p. 55.
*Intradermal Analgesia. J. R. Kovarik and W. J. Hegedus.—p. 59.

Electrocardiographic Diagnosis of Myocardial Infarction.—An electrocardiogram in which the three standard leads are within normal limits does not rule out the possibility of myocardial damage. For proper evaluation of the cardiac status of a patient, six precordial unipolar leads, in addition to the standard leads, should be the minimum. The five patients reported on showed indefinite evidence or no findings of myocardial infarction in the standard leads, while the six unipolar precordial leads showed unequivocal findings of myocardial infarction. The authors believe that three standard leads, six unipolar precordial leads and three augmented unipolar extremity leads should be used in the electrocardiographic examination of every patient suspected of myocardial damage. It is emphasized that the electrocardiogram is only one part of a clinical examination.

Intradermal Analgesia.—Intradermal analgesia was used as a method of relieving pain of childbirth in 29 women, including primiparas and multiparas. Either 1½ per cent piperocaine hydrochloride (metycaine hydrochloride®) in isotonic solution of sodium chloride or 1 per cent procaine hydrochloride in isotonic sodium chloride solution with 1:250,000 epinephrine was injected intradermally on the anterior abdominal wall. The initial wheal was made approximately one fingerbreadth above the top of the symphysis, was continued parallel to Poupart's ligament intradermally to the level of the anterior superior spine bilaterally and was finally continued up the midline to within two fingerbreadths of the umbilicus. After the patient was turned on one side, a wheal was made intradermally at the base of Michaelis' rhomboid and was extended intradermally in the shape of a V to the posterior superior spines. A total of 45 to 60 cc. of solution was used. Results showed that intradermal analgesia was effective for the relief of pain during the first stage of labor. The duration of the analgesia was less than three hours. No ill effects were noted in mother or child. The length of labor was apparently shortened. This method is recommended for trial by the obstetrician.

New England Journal of Medicine, Boston

244:161-198 (Feb. 1) 1951

Intrapancreatic Obstruction. C. W. Wainwright.—p. 161.
*Cerebral Pseudotumor or Intracranial Hypertension of Unknown Cause: Report of Three Cases. C. W. Elkins and F. J. Rack.—p. 171.
Acute Porphyria: Report of Case Showing Ineffectiveness of ACTH. J. E. Oltman and S. Friedman.—p. 173.
Function of Suburban Hospital in Civil Defense: The Concord Plan. S. C. Dalrymple and F .C. McDonald.—p. 175.
Fifty Years of Medical Progress; Medicine as a Science: Pediatrics. R. M. Smith.—p. 176.

Cerebral Pseudotumor.—The cause of increased intracranial pressure is readily determined in most cases. However, attention is called to a syndrome called cerebral pseudotumor or intracranial hypertension of unknown etiology, which shows the signs and symptoms of an intracranial space-occupying lesion that cannot be demonstrated by any diagnostic procedures. The authors studied three cases in which the cause for persistent or intermittent intracranial pressure could not be determined. Signs and symptoms were similar: lethargy, severe headache, blurring of vision, vomiting and papilledema. The spinal fluid pressures were highly elevated, and the fluid was crystal clear, without great increase in cell count. There was no fever, leukocytosis or other evidence of inflammation. Ventriculograms revealed no significant abnormalities. The most likely diagnosis in each case seemed to be brain tumor, but there were no localizing signs. The first patient was operated on, and the brain was found to be under increased pressure, but no tumor was revealed. The patient died three days later. Autopsy failed to reveal any significant abnormalities. In the second patient, simple subtemporal decompression controlled the symptoms and restored vision. In the third case three decompressions were performed, but the intracranial pressure was still capable of rising sufficiently to produce severe headache, and only a slight improvement was observed. Failure of the autopsy to reveal abnormality in the first case and the course of the other patients lead the authors to believe that these were cases of the syndrome known as cerebral pseudotumor or intracranial hypertension of unknown cause. When pseudotumor of the brain is suspected, procedures for lowering intracranial pressure, such as dehydration and repeated spinal fluid drainage, may sometimes control the disease. Advancing papilledema with decrease in visual acuity and intractable headache may make decompressive intervention imperative.

New Jersey Medical Society Journal, Trenton

48:45-90 (Feb.) 1951

Congenital Heart Disease: II. Angiocardiography, Aortography and Cardiac Catheterization. D. F. Downing, N. A. Antonius, S. Parent and others.—p. 47.
Obstruction to Nasal Breathing Caused by Enlarged Plicae. E. Reeves. —p. 51.
Dicumarol Therapy. S. Shapiro and M. Weiner.—p. 52.
Uterine Suspension: Supplemental Report. M. E. Baker.—p. 56.
Surgery of Extremities in Cerebral Spastic Disorders. S. Keats.—p. 57.
Congenital Atresia of Esophagus with Tracheoesophageal Fistula: Report of Successful Operative Result. E. A. O'Neill.—p. 60.
Operative Recovery of Multiple Atresia at Ileo-Cecal Area. E. R. Ristine, A. S. Hansen and E. R. Principato.—p. 65.
Nutrition in Childhood. S. Blaugrund.—p. 70.
Roentgen Findings in Diagnosis and Management of Infantile Scurvy with Report of Three Cases. L. S. Ellenbogen, A. C. Crowe and M. Green. —p. 73.
Hypoprothrombinemia—with Case Report. A. E. Abramo, L. De Yoe and M. Notkin.—p. 77.

New Orleans Medical and Surgical Journal

103:279-322 (Jan.) 1951

"Our Aims": Address of the President, Surgical Association of Louisiana. I. Cohn.—p. 279.
*Culdocentesis. D. W. Beacham and W. D. Beacham.—p. 283.
*Partial Excision of Inferior Vena Cava in Suppurative Pelvic Thrombophlebitis. J. H. Collins, W. J. Baggs and R. C. Ball.—p. 288.
*Nitrogen Mustard in Treatment of Advanced Carcinoma of Lung: Analysis of 68 Cases. W. B. Ayers.—p. 290.
Radical Surgical Treatment of Carcinoma of Cervix: Analysis of 32 Cases. J. C. Weed.—p. 294.
The Charity Hospital Chest X-Ray Unit: Value of Routine Photoradiography. S. Jacobs.—p. 298.
Allergic Basis of Certain Otorhinolaryngologic Complaints. J. R. Anderson.—p. 302.
Diagnosis and Treatment of Macrocytic Anemia. G. A. Goldsmith. —p. 309.

Culdocentesis.—This is a report on an estimated 500 patients who have undergone culdocentesis at the Charity Hospital at New Orleans. Aspirations have been performed in the majority of patients suspected of having hemoperitoneum or abscesses in the cul de sac. The patient is placed in the lithotomy position for abdominopelvic examination. After palpation, the speculum is inserted so as to expose the cervix and posterior fornix. The posterior lip of the cervix is grasped and elevated. The posterior fornix is sponged dry, and an antiseptic solution is applied. The needle is thrust into the center of the cul de sac or into the previously felt mass therein. The depth of insertion has rarely exceeded 2 cm. Suction is applied with the syringe. If no fluid is obtained, the suction is maintained as the needle is slowly withdrawn. In a total of 194 cases blood was aspirated and laparotomy was performed. The great majority of the patients had extrauterine pregnancies. It is in the diagnosis of hemoperitoneum due to this condition that aspiration has been of greatest value. Prior to 1947 culdocentesis as done in less than 30 per cent of cases of suspected ectopic pregnancy, and the accuracy of preoperative diagnosis was less than 65 per cent. During the last 13 months, aspirations were performed on 90 per cent of the patients presumed to have ectopic pregnancy, and the preoperative diagnosis was correct in 95 per cent of the cases. Culdocentesis failed in nine of the 194 patients with hemoperitoneum in which it was attempted. In the total number of over 500 aspirations of the cul de sac, there were only six cases in which an unwarranted laparotomy was done. No death occurred as the result of culdocentesis, no malignancies have been spread and in the 15 patients who had uterine pregnancies there have been no abortions.

Partial Excision of Vena Cava.—A case is reported in which the inferior vena cava was resected immediately below the renal veins for suppurative thrombophlebitis. The patient's postoperative response was in no way different from similar cases in which simple ligation of the vena cava has been performed. This demonstrates that the veins may be safely resected when involved in inflammatory disease, as well as in tumors, as had been previously reported.

Nitrogen Mustard in Advanced Carcinoma of Lung.—The 68 patients with advanced pulmonary carcinoma whose cases are reviewed in this paper were treated with the "bis" nitrogen mustard. The methyl-bis (β-chlorethyl) amine hydrochloride compound was preferred, because it causes less local reactions (venous thromboses) than does the "tris" compound. All but nine of the 68 patients were men. A course of treatment consisted of a daily dose of nitrogen mustard in an amount calculated on the basis of 0.1 mg. per kilogram of body weight, for four days. In the 17 patients in whom the course was repeated, this was done at intervals from eight to 16 weeks. The results in the present series have been similar to those of others; that is, about 40 to 50 per cent of patients with advanced carcinoma of the lung have transient relief of symptoms and occasional improvement in objective signs, such as relief of dyspnea and cough, decrease in sputum and hemoptysis, and increase in strength, appetite and weight. With rare exceptions, this improvement lasts from one week to a few months at most, and relapse always follows. The author feels that the "bis" nitrogen mustard may be considered a good adjunct to palliative therapy of carcinoma of the lung and that it is worth a trial in every case, for there is no way, at present, to predict its effectiveness in an individual patient.

New York State Journal of Medicine, New York

51:297-424 (Feb. 1) 1951

Family Utilization of Health Resources in Rural Areas. O. F. Larson, D. G. Hay, W. C. Levy and W. E. Mosher.—p. 335.
Public Health Aspects of Heart Disease. H. E. Hilleboe and I. J. Brightman.—p. 341.
Treatment of Syphilis from New Drug Standpoint: Changes Necessary in Handling Venereal Disease Patient. B. I. Kaplan and J. Ryan.—p. 346.
Tuberculosis Control in Mental Institutions. J. Katz, R. E. Plunkett and H. B. Lang.—p. 349.
Coordination of Health Education Program and What Makes It Click. G. W. Larimore.—p. 353.
Relationship of Child Health Conferences to Private Practice of Medicine. R. A. Higgons.—p. 355.
Medical Rehabilitation Program as Its Relates to the General Practitioner. A. M. Bahlke.—p. 357.
*Milkborne Poliomyelitis Episode. M. Lipari.—p. 362.
Management of Acute Small Bowel Obstruction. E. B. Mahoney and C. D. Sherman Jr.—p. 370.
Management of Regional Lymph Node Metastases. G. W. Taylor.—p. 376.
Diabetic and Arteriosclerotic Gangrene. J. B. McKittrick—p. 379.
Metabolic Studies in Patients with Traumatic Spinal Cord Injuries with Special Reference to Glucose Tolerance and Liver Function. A. W. Cook and H. A. Lyons.—p. 383.
*Further Studies on Treatment of Common Cold with Antihistaminic Drugs. C. R. Shaw and H. B. Wightman.—p. 387.
Antistreptolysin Titer as Aid in Diagnosis of Rheumatic Fever. B. B. Breese and H. Gray.—p. 389.
Management of Cancer of Penis. A. Goldey.—p. 392.

Milk-Borne Poliomyelitis Episode.—A sudden, circumscribed, unseasonal epidemic of poliomyelitis occurred in October and November 1949 in the northeastern section of Delaware County, New York. Twenty-three cases of poliomyelitis were reported from the epidemic area, which had a population of 3,000 and included several villages. Milk and/or cream from dairy "C" of one of the villages was suspected to be the medium of transmission in this epidemic. Two other milk-borne poliomyelitis outbreaks had been recognized in New York State in previous years. The present study yielded some epidemiologic support to the suspicion that the consumption of dairy "C" milk caused 13 of the 23 paralytic cases and nine of the 17 nonparalytic cases in this epidemic. There is evidence that the cases due to contact spread complemented the milk-borne cases. In spite of the suggestive circumstances associated with this epidemic and the epidemiologic evidence, which supports the possibility that dairy "C" milk caused some of the paralytic and nonparalytic cases in this epidemic, the author realizes that his study is subject to challenge on a few points for which evidence was either difficult or impossible to obtain.

Common Cold Treated with Antihistaminic Drugs.—Treatment of the common cold with antihistamine drugs was studied in 911 college students. The subjects were divided approximately into thirds, half of each group receiving an antihistamine preparation and half receiving a placebo. In one group, 2-phenyl benzyl amino-methylimidazoline hydrochloride (known as A) was given in a daily dose of 50 mg. In another group, the subjects were given 2-dimethylaminoethyl -3-thenylaminopyridine hydrochloride (known as B), a stronger antihistamine, in a daily dose of 15 mg. The third group was given 1-phenyl-1-alphapyridyl-3-dimethylamino-propane (known as C), a popular "over-the-counter" antihistamine sold for the treatment of colds. After three days of medication no definite trend in improvement was evident in the treated patients as compared with those receiving an inert placebo or acetylsalicylic acid. The beneficial effects of antihistaminic drugs in treatment of the common cold appear questionable.

Oklahoma State Medical Assn. J., Oklahoma City

44:1-44 (Jan.) 1951

Some Pitfalls in Diagnosis and Treatment of Carcinoma of Cervix. J. S. Bouslog.—p. 3.
Current Misconceptions in Conservative Pelvic Surgery. C. H. Tyrone.—p. 10.
Study and Investigation of Etiology and Treatment of Peptic Ulcer. F. M. Duffy.—p. 14.

44:45-80 (Feb.) 1951

*Intravenous Procaine in Promotion of Diuresis in Toxemias of Pregnancy: Preliminary Report. M. J. Serwer, R. F. Redmond, A. N. Vammen and others.—p. 48.
Management of Hydronephrosis Due to Upper Urinary Tract Obstruction. H. S. Browne.—p. 51.
Rupture of Bladder and Urethra. V. J. O'Conor.—p. 53.
Renal Lithiasis: Prevention of Recurrence. J. E. Miller.—p. 56.

Intravenous Procaine Hydrochloride as Diuretic in Toxemia.—Procaine hydrochloride was administered intravenously to 13 women. Two had toxemia superimposed on glomerulonephritis. Six had postpartum eclampsia. Five had antepartum eclampsia or preeclampsia. In the eclamptic patients the periods of anuria varied from eight to 15 hours before the procaine was given. All patients had received previously the usual treatment, consisting of sedatives and intravenously administered dextrose. Then 500 mg. of procaine hydrochloride dissolved in 200 cc. of 5 per cent dextrose in water was administered over a period of less than 15 minutes. In four patients no diuresis was obtained with the first administration of the drug, which was repeated in each patient in periods from six to 12 hours. With the second administration of procaine hydrochloride diuresis occurred in each instance. There was a latent period varying from one to two hours before diuresis. In one instance the total urine excreted in 24 hours after previous anuria was approximately 3,800 cc. In patients previously given barbiturates no toxic effects were noted. Nervousness and apprehension following procaine hydrochloride administration in two patients were readily controlled with barbiturates. In one instance the administration of morphine sulfate decreased appreciably the rate of diuresis during the administration of procaine hydrochloride. Preliminary studies on the effects of procaine hydrochloride on kidney function indicated a change in renal plasma flow, glomerular filtration rate and tubular function.

Pennsylvania Medical Journal, Harrisburg

53:1233-1392 (Dec.) 1950

Present Status of Antibiotic and Chemotherapeutic Agents in Surgery. W. A. Altemeier.—p. 1257.
Aureomycin, Chloramphenicol, and Terramycin. H. F. Flippin.—p. 1262.
Clinical Use of Neomycin: Preliminary Report. J. R. Wolgamot and G. G. Duncan.—p. 1264.
Infections of Hand. L. K. Ferguson.—p. 1269.
Diagnosis and Treatment of Allergic Rhinitis. M. W. Miller.—p. 1274.
Poliomyelitis: Study of 320 Cases. E. E. Nicholls.—p. 1278.
Management of Patients with Intermittent Claudication. M. Naide.—p. 1283.
Portable Diabetic Coma Treatment Stand. O. E. Turner.—p. 1285.
Diagnostic and Therapeutic Problems in Large Bowel Obstruction Due to Carcinoma of Colon. A. W. Ulin, P. J. Grotzinger, C. L. Sacks and W. L. Martin.—p. 1290.

Physiological Reviews, Baltimore

31:1-106 (Jan.) 1951

Physiology of Fertilization in Mammals. M. C. Chang and G. Pincus. —p. 1.
Secretory Function of Male Accessory Organs of Reproduction in Mammals. T. Mann and C. Lutwak-Mann.—p. 27.
Biological Mechanisms of Carboxylation and Decarboxylation. S. Ochoa. —p. 56.

Radiology, Syracuse, N. Y.

56:1-164 (Jan.) 1951

*Familial Fibrous Swelling of Jaws. J. Caffey and J. L. Williams.—p. 1.
Developments in Cerebral Angiography with Rapid Serialized X-Ray Exposures on Roll Film 9½ Inches Wide. W. G. Scott and W. B. Seaman.—p. 15.
Angiocardiographic Diagnosis of Mediastinal Tumors with Special Reference to Aortic Aneurysms. A. Celis, C. R. Pacheco and H. del Castillo. —p. 31.
*Thorium X Treatment of Skin Epithelioma, Keratoses, and Delayed Radiation Changes. J. J. Sher and W. E. Howes.—p. 39.
Irradiation Damage of Intestines Following 1,000-Kv. Roentgen Therapy. Evaluation of Tolerance Dose. H. I. Amory and I. B. Brick.—p. 49.
Symptomatic Hemangioma of Spine. H. J. Manning.—p. 58.
Inverted Position in Roentgenography. G. V. Butler.—p. 66.
Chorionepithelioma of Uterus: Resume of Literature and Presentation of Two Cases. L. M. Levi and P. V. Haig.—p. 73.
Pharmaco-Cholangiography in Diagnosis of Odditis. J. M. Urrutia and P. Lavezzo.—p. 80.
Penumbra Effect in Therapy Cones. A. Raventos and G. S. Schwarz. —p. 84.
Studies of Radium in Human Bone. F. E. Hoecker and P. G. Roofe. —p. 89.
Use of Autoradiographs to Detect Defects in Radium Needles and Tubes and Inequalities in Distribution of Radium. J. H. Freed, E. P. Pendergrass and H. Raufer.—p. 99.
Gynograph. New Improved Gynoroentgenologic Apparatus for Use in Conjunction with Fluoroscopy and Radiography of Female Genital Tract. A. I. Weisman.—p. 104.
Uniform Contact Roentgen Therapy for Large Areas. Simple Device and Method. E. F. Lutterbeck and I. F. Hummon.—p. 108.
Simple Method for Direct Projection of Section of Roentgenogram onto Screen. A. R. Shands Jr. and F. P. Stone.—p. 112.

Familial Fibrous Swelling of Jaws.—The familial occurrence of painless enlargement of the jaws was first reported by Jones in 1933 in three siblings, 6, 5 and 4 years of age. Later, x-ray studies on the same family revealed that the condition was due to multiple dentigerous cysts involving the entire upper and lower jaws and accompanied by chronic enlargement of the lymph nodes in the submaxillary regions. The authors of the present report observed two families, some members of which exhibited clinical and roentgen signs similar to those in the cases described by Jones. The disorder is characterized by massive swelling of the cheeks and jaws beginning during the first three years of life. Dentition is defective. There are no associated symptoms or systemic manifestations unless the lower jaw becomes so large that it prevents closure of the mouth and interferes with respiration and speech. Roentgenograms shows extensive multilocular rarefaction and pronounced expansion of the mandible. The maxilla is also greatly expanded, but the rarefaction is diffuse rather than multilocular. No other bones are affected. Near puberty, the facial appearance improves, with a progressive decrease in the size of the jaws; by middle age the roentgen and facial abnormalities are minimal or absent. Tissue specimens from the jaws show fibrous tissue containing varying numbers of giant cells, and the histological picture was identical with that of fibrous dysplasia. Various diseases of the jaws have been called fibrous dysplasia, fibrous osteoma, osteofibroma and ossifying fibroma. Most of the recent writers agree that these diseases may be regarded as variants of fibrous dysplasia. The authors of the present report believe that in spite of the histological similarity of fibrous dysplasia and familial fibrous enlargement of the jaws these conditions should be regarded as separate entities.

Thorium X Treatment of Skin Lesions.—Thorium X is a radioactive element obtained by separation from its parent element, radiothorium. It has a half life of 3.64 days. It emits principally alpha particles ranging in energy from 5.5 to 8.8 mev. Sher and Howes stress that thorium X should not be confused with thorium or other thorium compounds. The thorium paste previously used by Bulkley did not contain thorium X but contained thorium oxide in combination with other chemicals. The action of this paste was mainly a caustic one, not dependent on its radioactive qualities. The authors applied thorium X directly to the lesion in alcoholic solution or ointment, containing 150 to 300 microcuries per cubic centimeter or gram. They review the results obtained with this treatment in 51 cases of skin epithelioma. Forty-six were of the basal cell variety, four were squamous carcinoma of the prickle cell type and one was of the mixed basosquamous type. Uniformly satisfactory results were obtained in 50 of 51 cases of skin epithelioma. A single case, a deep rodent ulcer, did not respond. Keratoses were all satisfactorily eradicated with but two or three applications of the alcoholic solution. This agent is an efficient method of clearing senile keratoses and destroying superficial epitheliomas, as well as improving the cosmetic appearance following radiation damage to skin and stimulating healing in radionecrosis. Application of the material is simple. The solution is swabbed over and the ointment is rubbed into the part. Transient erythema usually follows one or several applications. Pigmentation may follow the erythema, but no untoward sequelae have been encountered. No ugly scarring has been observed. On healing, the treated area becomes soft and pliable. Sensitive organs, as the eye, ear, nose, hair and even cartilage, have not been damaged. Hair follicles and sebaceous glands remain intact following repeated application of thorium X in solution.

Review of Gastroenterology, New York

18:1-78 (Jan.) 1951

Enteric Cysts of Stomach: Case Report. G. McNeer and L. J. Spitz. —p. 13.
Action of Drugs on Human Biliary Tract. J. M. McGowan and S. Sarkisian.—p. 19.
Diaphragmatic Hernia. W. E. Jones.—p. 31.
Infective Hepatitis. S. O. C. Pribram and R. Upham.—p. 37.
Discovery of Cause and Cure of Gastrointestinal Ulcers. J. S. Smul. —p. 61.
Syphilis and Rectum. W. Lieberman.—p. 67.
Arthritis as Related to Gastroenterology. P. J. Warter and S. Horoschak. —p. 70.

Rocky Mountain Medical Journal, Denver

48:73-152 (Feb.) 1951

Diaphragmatic Hernia. A. K. Atkinson and J. A. Layne.—p. 93.
Chronic Myocardial Failure: Ambulatory Management, Progress Report. J. G. Olson and F. W. Seager.—p. 97.
Current Status of Electron Microscope in Thin Tissue Studies. E. F. Geever, R. F. Dent Jr. and M. Barhite.—p. 99.
Clinical Evaluation of Isonorin in Bronchial Asthma. H. I. Goldman. —p. 102.
Comparative Inadequacy of Present Day Market Streptomycin in Tuberculosis. H. J. Corper, M. L. Cohn and W. H. Frey.—p. 104.
Treatment of Fresh Accidental Wounds. M. Wood.—p. 108.

South Carolina Medical Assn. Journal, Florence

47:45-90 (Feb.) 1951

Physician Know Thyself. J. H. Means.—p. 45.
Cardiac Catheterization in Diagnosis of Congenital Heart Disease. J. A. Boone.—p. 50.
Behavior Disturbances in Children. J. H. Marshall.—p. 52.
Cardiac Evaluation in Combined Respiratory Vascular Disease. B. N. Miller.—p. 57.
Practical Method of Intra-Arterial Transfusion. K. M. Lippert and I. K. Furman.—p. 63.
Clinical Significance of Foreign Body Granulomas: Review. D. Symmers. —p. 66.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

59:1-48 (Jan.) 1951

Single-Layer Open Intestinal Anastomosis Applicable to Small as Well as Large Intestine. L. P. Gambee.—p. 1.
Trend Toward Complete Hysterectomy. I. F. Stein.—p. 6.
The Elderly Primigravida: Thirteen Year Review. R. J. Hawkins, W. E. Foley Jr. and T. M. Tierney.—p. 13.
Caudal Analgesia in Private Obstetric Practice: Review of 2,139 Cases. G. C. Downing.—p. 19.
Tuberculous Cholecystitis: Case Report. O. F. Grimes and R. L. O'Neal. —p. 24.
Chronic Poisoning of Ovaries and Testes of Albino Rats and Mice by Nicotine and Cigarette Smoke. J. M. Essenberg, L. Fagan and A. J. Malerstein.—p. 27.
Spontaneous Hematoma of Rectus Abdominis Muscle Simulating Twisted Ovarian Cyst: Report of Three Cases. H. Broady.—p. 33.
Spontaneous Retroperitoneal Hemorrhage Complicating Pregnancy, with Review of Literature. R. W. Kistner and S. T. Garber.—p. 35.
Gartner's Duct Cyst Complicating Pregnancy. M. Roland.—p. 41.

FOREIGN

Acta Clinica Belgica, Brussels

5:481-556 (Nov.-Dec.) 1950. **Partial Index**

*Evaluation of Effects of Streptomycin on Pulmonary Tuberculosis in Adults. H. Durieu, F. de Clercq, J. Kenis and others.—p. 487.
Rapid Determination of Gamma Globulin Concentration in Blood Serum by Zinc Sulfate Method. J. Demeulenaere and R. J. Wieme.—p. 512.

Streptomycin in Pulmonary Tuberculosis.—Streptomycin or dihydrostreptomycin was used in the treatment of 234 patients with pulmonary tuberculosis. The daily dose of the drug varied from 0.5 to 3 Gm., but most of the patients received one injection of 0.5 Gm. every 12 hours. Some patients were given 2 Gm. every third day, and this technique seemed to delay streptomycin resistance. The duration of treatment varied from 30 to 200 days, but the majority of the patients were treated for three months. Treatment was usually discontinued when the roentgenologic picture returned almost to normal or no longer showed any improvement. Although streptomycin exerted some effect on many forms of pulmonary tuberculosis, its efficacy varied considerably according to the roentgenologic and clinical picture. Five roentgenologic types of pulmonary tuberculosis were distinguished: the micronodular or miliary, the reticulonodular, the large nodular, the homogeneous and the ulcerative types. Complete clearing of the miliary lesions was observed in all patients with uniform micronodules, in 44 per cent of the patients with irregular micronodules and in 30 per cent of the patients with "cold miliary tuberculosis," i. e., patients with minimal clinical symptoms. Complete clearing of reticulonodular lesions occurred in 8 per cent of the cases. Large nodules cleared in 11 per cent, homogeneous infiltrates in 9 per cent and ulcerative lesions in 3 per cent of the patients having each of these types of lesion. In general, the acute cases responded better to streptomycin than the chronic cases. In the presence of cavities, the associated noncavitary lesions showed less improvement and complete clearing was uncommon. Satisfactory results were obtained frequently in bronchial tuberculosis. Koch's bacillus disappeared in 10 per cent of the patients with cavities and in 50 per cent of those without cavities. Imperative, relative and questionable indications for treatment with streptomycin are listed. Streptomycin proved to be of much aid in collapse therapy by making this procedure safer in 20 of 117 patients with cavities and by making it possible in an additional 28 patients. Toxic reactions, such as disturbances of hearing and erythema, were observed less frequently in patients treated with dihydrostreptomycin than in those treated with streptomycin, but they were still observed regularly with total doses of more than 100 Gm. of dihydrostreptomycin.

Acta Medica Orientalia, Jerusalem

9:237-266 (Oct.) 1950. **Partial Index**

Rupture of Retroperitoneal Part of Duodenum Following Trauma: Report of Four Cases. O. Aladjem.—p. 237.
Acute Cerebral Accidents in Diabetes. E. Lyon.—p. 246.
*Fatal Acute Boxing Injuries. E. Jokl.—p. 255.

Fatal Acute Boxing Injuries.—This report is concerned with two cases in which death resulted from severe damage to the brain in the absence of fractures. The first patient, a youth of 17, had received a powerful blow to the right temple. He collapsed shortly thereafter and then had an epileptic grand mal attack. This boy had not had epilepsy before. He was moribund when he was taken to a hospital. Five minutes after admission he was dead. Necropsy revealed the skull to be intact, but a subdural hemorrhage covered the greater part of the left cerebral hemisphere. The second patient, aged 20, had received four severe blows to the side of the head. He collapsed shortly after the boxing match and died on the seventh day. Throughout the sixth day involuntary twitching movements of the left hand were observed. Necropsy revealed a hemorrhage over the right hemisphere, and a fresh clot of blood was attached to the dura. The skull was intact. These cases prove that epileptiform symptoms may result from subdural hemorrhages, and the authors stress that in such instances surgical intervention is imperative, especially if the symptoms allow localization of the cerebral focus as in the second case under discussion.

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

Acta Vitaminologica, Milan

4:241-284 (Dec.) 1950. **Partial Index**

*Effect of Paraaminobenzoic Acid in Serum Sickness. G. Ricci.—p. 271.

Effect of Paraaminobenzoic Acid in Serum Sickness.—The author studied 39 infants and children with serum sickness following the administration of diphtheria antitoxin, either normal or purified, in treatment of pharyngeal, laryngeal or nasal diphtheria. The dose of antitoxin varied from 60,000 to 100,000 international units. The serum sickness occurred in seven to 10 days after administration of the serum in all cases but five. In these it occurred within the first three days. Thirty-four of the patients were treated with paraaminobenzoic acid, given either orally or intramuscularly. The dose varied with the age of the patient and the acuteness of the serum sickness. For one or two days a daily dose of 6 to 18 Gm. was given, after which the dose was reduced to between 3 and 9 Gm. This was continued for four days after disappearance of the clinical symptoms of the disease. The daily doses were divided into six equal parts administered at four-hour intervals. As a rule, the clinical symptoms of the disease abated immediately after start of the treatment, were controlled within the first day and showed no tendency to return after four days of sustained treatment. In the five patients with serum sickness who did not receive paraaminobenzoic acid, the symptoms were severer and of longer duration, requiring four to seven days for control.

Archivum Chirurgicum Neerlandicum, Arnhem

2:201-300 (No. 3) 1950. **Partial Index**

Early Diagnosis of Carcinoma of Lung. J. K. Kraan.—p. 201.
Pulmonary Carcinoma. L. D. Eerland.—p. 213.
Carcinoma of Prostate. H. C. E. M. Houtappel.—p. 246.
*Surgical Treatment of Bronchial Asthma. P. Nyst.—p. 261.
Tumors of Joint Capsule. W. F. Suermondt.—p. 278.

Surgical Treatment of Bronchial Asthma.—Bilateral resection of the posterior bronchial plexus was done for the first time in a human subject with bronchial asthma by Rienhoff and Gay in 1938. Nyst performed this operation in 11 patients with intractable bronchial asthma. In two of his 11 patients the resection was combined with bilateral extirpation of the sympathetic thoracic ganglions 2 to 5, and in two other patients these ganglions were extirpated on the left side only. There were no complications during or after the operations, and there was no mortality. The author says that it is difficult to explain why the mortality should have been so high with such an able thoracic surgeon as Rienhoff. The encouraging results in the author's own cases will, he hopes, persuade others not to overestimate the risks of this operation. The liberal use of antibiotics may possibly be helpful in preventing postoperative complications. The results depended neither on the duration of the disease nor on the age of the patient. Only one of the patients was free from asthmatic attacks three years after the operation, and she was also the only one who had ceased taking medicines. Five of the patients reported slight attacks, and five were still subject to asthmatic crises. Of the patients subjected to sympathectomy, the two whose thoracic ganglions had been extirpated on one side improved; one of the patients subjected to bilateral sympathectomy became worse, and the other showed slight improvement. In the majority of cases resection of the pulmonary plexus reduced the secretion of mucus. The author believes that surgical treatment of bronchial asthma is indicated when medical therapy has failed or when serious invalidism or even death threatens because of recurrences of status asthmaticus.

Arquivos de Clínica, Rio de Janeiro

11:225-274 (Nov.-Dec.) 1950. **Partial Index**

*The Heart in Myxedema: Report on Seven Cases with Radiologic and Electrocardiographic Observation During Thyroid Therapy. L. Capriglione, J. Schermann, P. Schlesinger and A. B. Benchimol.—p. 225.

The Heart in Myxedema.—The authors report seven cases of acquired myxedema with clinical, roentgenological and electrocardiographic evidence of cardiac involvement. The heart size was increased in six of the seven cases, probably because of in-

filtration of the myocardium with a mucoid fluid. There was no evidence of pericardial effusion, and none of the patients had congestive cardiac failure. Treatment with cardiotonic agents alone was ineffective in these cases, but the addition of thyroid therapy produced symptomatic improvement, a reduction of cardiac size and progressive improvement in the electrocardiogram. The T wave became wider in five cases, and an auriculoventricular block disappeared in one patient. In all patients there was an increase in the basal metabolic rate and a decrease in the serum cholesterol level. The electrocardiographic changes in myxedema are regarded as functional, since they largely disappear during treatment and reappear when it is stopped. There was no correlation between the intensity of the myxedema and the degree of roentgenologic and electrocardiographic changes in these patients.

Beiträge zur Klinik der Tuberkulose, Heidelberg

104:379-464 (Jan. 4) 1951. **Partial Index**

Pneumoperitoneum and Temporary Phrenic Nerve Paralysis: Experience with 250 Cases from IRO-Sanatorium in Gauting. E. Sedlaczek. —p. 379.
*Treatment of Pulmonary Tuberculosis with Streptomycin. E. Haefliger, G. Mark and E. Geisel-Wermter.—p. 388.
Experiments to Attenuate Tubercle Bacilli by Amithiozone. R. Hasche-Klünder and E. Kröger.—p. 405.

Streptomycin in Pulmonary Tuberculosis.—Streptomycin was administered to 156 patients with pulmonary tuberculosis, who were followed up for at least three months after treatment was terminated. Results showed that recent infiltrations, acute episodes in the course of chronic pulmonary tuberculosis and recent hematogenous and bronchogenous dissemination respond best to streptomycin. The drug may also prevent bronchogenous dissemination after severe hemoptysis and hematogenous dissemination in primary infections with a tendency to extension. It is seldom indicated in benign forms of tuberculosis. Recovery resulted from treatment with streptomycin alone in one fourth of the patients with cavitation. Regression of the cavity by transformation into a solid lesion was demonstrated on roentgenological examination. This transformation occurred after previous occlusion of the draining bronchus in several cases; it is suggested that bronchial occlusion may be obtained more easily with the use of streptomycin. Collapse therapy however is indispensable in spite of treatment with streptomycin in the majority of patients. Combined collapse and streptomycin therapy opens rich therapeutic possibilities for the sanatorium physician. Indications for pneumothorax, thoracoplasty and extrapleural pneumonolysis may be widened when streptomycin is used for preoperative and prophylactic treatment. The optimum average daily dose of streptomycin is 1 Gm. in two divided doses of 0.5 Gm. Streptomycin is not a substitute for sanatorium treatment and collapse therapy of pulmonary tuberculosis, but is a valuable adjunct to these methods of treatment.

British Journal of Experimental Pathology, London

31:577-690 (Oct.) 1950. **Partial Index**

Maintenance of Strains of Schistosoma Mansoni, S. Haematobium and S. Matthei in Laboratory in Egypt, with Special Reference to Use of Gerbils. M. A. Azim and S. G. Cowper.—p. 577.
Effect of Diet on Oestrogen Inactivation by Liver. P. Ferret.—p. 590.
*Use of Antibiotics in Treatment of Experimental Diphtheria Infections. L. F. Hewitt.—p. 597.
Studies on Role of Adrenal Cortex in Adenosine Triphosphate Shock. H. B. Stoner and H. N. Green.—p. 603.
Effect of Injection of Diphtheria Prophylactic into Apparently Normal Horses. M. Barr.—p. 615.
*Synergistic Action of Anterior and Posterior Pituitary Hormones and Their Possible Relation to Eclampsia. A. D. T. Govan and C. L. Mukherjee.—p. 626.

Antibiotics in Experimental Diphtheria Infections.—The action on Corynebacterium diphtheriae of aureomycin, chloramphenicol and dihydrostreptomycin sulfate, together with paraaminosalicyclic acid was tested in vitro, and the effect of these antibiotics, administered subcutaneously or orally, on C. diphtheriae infections in guinea pigs was also tested. Results showed that both orally and subcutaneously administered aureomycin have some protective effect against C. diphtheriae infections. No strain was observed to develop resistance to aureomycin, so that its use for treatment of diphtheria carriers by oral administration would involve the minimum of medical supervision. Chloramphenicol resembled penicillin in that although it is inhibitory to C. diphtheriae in vitro it failed to protect guinea pigs against infection. Dihydrostreptomycin protected guinea pigs against infection with virulent C. diphtheriae, and it may be of value for the treatment of patients and carriers. Resistance to dihydrostreptomycin developed fairly readily in the case of C. diphtheriae, and resistant strains were resistant also to streptomycin. Such resistance was not readily lost, and resistant strains retained their toxigenicity unimpaired. Paraaminosalicylate had no effect on the development of resistance to the antibiotic or on its inhibitory effect. Although retaining their toxigenicity unimpaired after the development of dihydrostreptomycin resistance, two gravis strains of C. diphtheriae lost their ability to ferment starch and became indistinguishable from mitis strains. This lends support to the previously advanced hypothesis that mitis strains may be degraded gravis strains.

Synergistic Action of Pituitary Hormones.—Subcutaneous injections of posterior pituitary solution (pituitrin®) in olive oil, subcutaneous injections of chorionic gonadotropin, intravenous injections of sheep anterior pituitary lobe extract and injections of urine from toxemic pregnant women with the addition of posterior pituitary solution were given to rabbits. Administration of large doses of posterior pituitary extract resulted in focal necrosis of the liver, but the lesions did not resemble those of eclampsia. Anterior pituitary extract sensitized the animals to the action of posterior pituitary extract, and produced lesions in the liver and kidneys that bore some resemblance to those of eclampsia. Chorionic gonadotropin did not sensitize the animals to the action of posterior pituitary extract. The urine of some severely toxemic pregnant women sensitized the animals to posterior pituitary extract in a manner similar to that of anterior pituitary extract. It is suggested that toxemia of late pregnancy may be due to hyperactivity of the anterior pituitary lobe, which sensitizes the patient to slightly increased amounts of posterior pituitary secretion. It is also suggested that the gonadotropins in late pregnancy are derived from the anterior lobe of the pituitary. It appears from the experiments that the administration of posterior pituitary extract to patients with a high level of gonadotropins in the blood is somewhat dangerous.

British Journal of Tuberculosis, London

45:1-40 (Jan.) 1951

Prognosis in Pulmonary Tuberculosis. J. Stephani.—p. 1.
Pulmonary Agenesis. F. S. W. Brimblecombe.—p. 7.
Minor Respiratory Infections: Importance of Their Diagnosis and Treatment. D. G. Wraith.—p. 15.
Conjugal Tuberculosis and Its Bearing on Etiology of Disease. W .E. Snell.—p. 22.
Changing Pattern of Pneumonia. A. L. Wingfield.—p. 27.

British Medical Journal, London

1:205-262 (Feb. 3) 1951

Reactions of Bacteria to Chemotherapeutic Agents. L. P. Garrod.—p. 205.
*Diagnosis of Aortic Stenosis Based on Study of 25 Proved Cases. D. Lewes.—p. 211.
Subacute Bacterial Endocarditis Due to H. Para-Influenzae and Str. Viridans. J. G. Goudie and C. P. Lowther.—p. 217.
*Leg-Lengthening. F. G. Allan.—p. 218.
Bone-Shortening for Inequality of Leg Lengths A. L. Eyre-Brook. —p. 222.
Six Blood-Group Antibodies in Serum of Transfused Patient. R. K. Waller and R. R. Race.—p. 225.

Diagnosis of Aortic Stenosis.—Among 2,245 routine necropsies performed at the Postgraduate Medical School of London during the seven year period ending February 1950, aortic stenosis was found in 45 cases (1.8 per cent). Calcareous aortic stenosis was the only significant valvular lesion in 25 of these 45 cases; in the remaining 20 other lesions were found as well: 16 were complicated by mitral stenosis, three by gross aortic incompetence and one by tricuspid stenosis and mitral stenosis. As it was thought that the clinical problem of aortic stenosis could be studied satisfactorily only when uncomplicated by other valvular lesions, detailed analysis was confined to the first group (25 cases). In three of the 25 cases death was due to noncardiac

causes and aortic stenosis was a coincidental necropsy finding. Twenty-two patients first came under medical observation on account of cardiac or cerebral symptoms; 15 died from heart failure consequent to the valvular lesion, and four died from bacterial endocarditis. A correct clinical diagnosis was made in a little over half the cases. On the basis of the classic signs of a slowly rising pulse, an aortic systolic murmur and thrill and an absent second sound, less than one-sixth of the cases would have been recognized clinically. Evidence is given to show that in considerably more than half the reported cases a correct diagnosis could have been made in life. A more careful evaluation of harsh aortic systolic murmurs and demonstration by fluoroscopy of grossly calcified aortic valves could have determined the diagnosis in some cases; a closer study of the course of the disease after the onset of symptoms should have directed attention to the valvular lesion in others.

Leg Lengthening.—Since shortening of the lower limb is a complication of many conditions, attempts have been made to correct this deformity by operative means. There are three possible operative methods of limb equalization: (1) limb lengthening, (2) limb shortening and (3) arrest of epiphysial growth. For a person who is going to grow tall, controlled epiphysial arrest seems to be the ideal procedure, but there will always be some in whom the chance of slowing growth in the longer limb will have been missed. There remains the choice of lengthening or shortening, and when the alternative is offered, lengthening is usually chosen, even though the comparative simplicity of shortening is stressed. The patient usually regards shortening as a mutilation. The following contraindications to leg lengthening are mentioned: (1) inadequate blood supply to the short limb, (2) shortening so great that amputation and the fitting of a prosthesis would be preferable, (3) active or recently active bone or joint disease, (4) age (only adolescent and young adult patients are suitable) and (5) poor control, though it is sometimes worth while to lengthen a completely flail limb. In discussing the operative technique, the author says that nearly all the difficulties and many of the risks enumerated are due to interference with the blood supply to the limb or to the separated bone fragments. This results almost entirely from the extensive soft-tissue dissection that is carried out by those who believe that the soft tissues will not stretch or will be permanently injured during stretching. This is not so, and all that is theoretically necessary is division of the bone and gradual separation of the fragments. Everything else will stretch, given sufficient time and a distracting force that is strong enough. The operation should therefore be confined to a Z-shaped or oblique osteotomy and to the application of the distracting apparatus. Distraction is started immediately and proceeds at the rate of about 1/16 inch (1.6 mm.) a day. It is regulated largely by the patient's reactions. The author lists the diagnoses in 101 cases in which leg lengthening operations were performed. In 54, tibial lengthening was done and in 47 femoral lengthening. Gains in length in both tibia and femur up to 2 inches (50.8 mm.) are possible without complications. Beyond that, transient complications occur and must be weighed against the desire to gain more length.

Deutsche medizinische Wochenschrift, Stuttgart

76:1-46 (Jan. 5) 1951. **Partial Index**

Tetany and the Gonads. P. Stucki.—p. 7.
Cushing Disease and Psychic Disturbances. W. F. Haberlandt.—p. 11.
Biologic Differentiation of Proteins in Aged Blood and Protein Material. P. Uhlenhuth.—p. 14.
Electron-Optical (Ultramicroscopic) Studies on Influenza Virus and the Agglutination-Lysis Phenomenon on the Erythrocyte Membrane. W. Bolt, O. Küchenhoff and T. Vogel.—p. 17.
*Clinical Experiences with Chloromycetin in Treatment of Serious Nutritional Disturbances. K. Weisse.—p. 18.

Chloramphenicol in Nutritional Disturbances.—Nutritional disturbances in infants were treated almost exclusively with dietetic measures until the sulfonamides and antibiotics became available. This paper presents observations on the use of chloramphenicol (chloromycetin®) in infants with severe dyspepsia. The first case discussed concerned a prematurely born infant (birth weight, 1,250 Gm.) who lost weight and on the ninth day of life weighed only 900 Gm. The infant was fed milk from a breast milk collection station, but alimentary dyspepsia developed, the stools containing gram negative as well as gram positive organisms. When the infant was almost moribund, treatment with chloramphenicol was begun (150 mg. given over a period of 48 hours). With this treatment the infant improved rapidly and the pathogenic flora disappeared from the stools. In two other prematurely born infants and in four young infants up to 9 months of age who exhibited dyspeptic disorders, treatment with chloramphenicol produced equally favorable results. In some of these infants the dyspepsia was of alimentary origin; in others it developed after attacks of influenza or severe jaundice. Signs of severe toxicity, such as stupor and Kussmaul's reaction (air hunger), subsided in from eight to 30 hours. The dyspeptic manifestations—lack of appetite, vomiting, diarrhea and loss of weight—rapidly disappeared as did the pathogenic organisms. The therapeutic effect of chloramphenicol on dyspeptic disorders was definitely superior to that of sulfonamides and of streptomycin.

Geburtshilfe und Frauenheilkunde, Stuttgart

11:1-96 (Jan.) 1951. **Partial Index**

*More Extensive Use of Cesarean Section. E. Anderes.—p. 1.
Diagnosis and Therapy of Thrombosis and Embolism. T. Koller.—p. 13.
Treatment of Febrile Abortion. R. Stewens.—p. 38.
Significance of Diphtheria Bacilli in Gynecology. H. Hartl.—p. 43.
*Superfetation and Defective Ova in Multiple Pregnancies: Report of Case and Survey of Literature. K. Salfelder and H. J. Lambertz.—p. 50.

Cesarean Section.—Although the improvement in the technique of the cesarean operation justifies its more extensive use, it should be performed only on the basis of strict indications. During the last four weeks preceding delivery, and particularly during delivery, the parturient woman should be examined only by way of the rectum. Vaginal examinations greatly increase the possibility of infection and are particularly dangerous if a cesarean operation is required subsequently. The use of high forceps should be rejected, because they cause serious injury to the soft tissues; furthermore, stillbirth or neonatal death often occurs after their use, as a result of intracranial hemorrhage. Cesarean operation, performed at the correct time as determined by repeated examination of the white blood cell picture, can usually circumvent the need for a high forceps operation, and the results are much better for both mother and child. When there is an increase in band cells, a choice must be made between abdominal and vaginal intervention. The longer cesarean operation is postponed beyond this point the more unfavorable the prognosis. If the operation is done at the right time and in properly selected patients and if adequate attention is given to contraindications, maternal mortality will not exceed 1 per cent.

Superfetation or Defective Ova.—A case of abortion of twins is reported in which there existed a great difference in the size of the fetuses, one being 14 cm., the other 9 mm., in length. Histological studies revealed that the placentas had been present for the same length of time and therefore that the two fetuses were also of the same age. The authors believe that the second, smaller fetus had developed from a defective ovum in a twin pregnancy. They cite factors to support this contention and then review the most important cases of supposed superfetation reported in the literature. They cite factors suggesting that in many of these cases also the supposed product of superfetation was in reality an underdeveloped embryo or fetus. They show that the good preservation of the smaller fetus or the apparent chronologic differences in the placentas cannot be taken as proof of superfetation. They feel that superfetation can be regarded as established only by the birth of infants differing in race and age, deriving from different periods of ovulation and from fathers of different races.

Giornale di Clinica Medica, Parma.

31:1345-1446 (Nov.) 1950. **Partial Index**

*Liver Function in Bright's Disease According to Various Recent Tests of Liver Function. D. Bastagli and A. Lodi.—p. 1345.
Myocardial Infarct in Ambulatory Patients: A Study of 168 Cases. M. Rosselli and G. Micheli-Pellegrini.—p. 1375.
Activity of Tissues in Determining Besnier-Boeck-Schaumann's Disease. G. Romualdi and A. Torrini.—p. 1386.

Liver Function in Bright's Disease.—The authors performed liver function tests in 35 patients with kidney disorders, including 29 patients with Bright's disease and six patients with acute renal diseases of other kind. In patients with chronic Bright's

disease, the tests of liver function were made before the occurrence of uremia. The tests performed were the Takata, Ucko, MacLagan, Hanger and the measurement of the values of cholinesterase in the blood serum. Four of the patients with Bright's disease had a history of previous liver disease. None of the patients showed clinical symptoms of liver dysfunction, except when uremia occurred. The laboratory tests, however, revealed functional liver changes in 18 out of 29 patients with Bright's disease and in all the six patients with acute renal diseases other than Bright's disease. There is no definite syndrome of liver insufficiency in renal diseases of any of the aforementioned types, but the functions of the liver are involved early in the course of renal diseases in most cases. Evidence that the liver is affected by the causal agent of the renal disease during the actual attack is given by the results of the tests, which showed liver dysfunction more frequently in the acute and subacute periods of the disease than in the chronic period, and which were positive in all cases of secondary acute renal diseases other than Bright's disease. In the chronic stage of Bright's disease, there is compensation of liver function, unless uremia appears.

Indian Medical Gazette, Calcutta

85:437-456 (Oct.) 1950

Acute Gastro-Enteritis Due to T. Vincenti and B. Fusiformis. L. M. Sanghvi and P. Subrahamanyan.—p. 437.
Two Instances of Proved Rabies in Tiger. S. R. Pandit.—p. 441.
*Outbreak of Plague in Epidemic Form Treated with Streptomycin and Sulfadiazine. P. K. Ghosh.—p. 441.
Insulin Resistance in Diabetes Patients. J. P. Bose.—p. 445.
Hydrophobia in India. M. L. Ahuja and A. G. Brooks.—p. 449.
Serological Technique: Immunotherapy (contd.). Immunization Against Rabies. S. D. S. Greval.—p. 453.

Streptomycin and Sulfadiazine in Treatment of Plague.—An epidemic form of plague that broke out in Babhnan and the vicinity in 1949 is described by Ghosh. The disease started in the local market in late summer and remained localized and sporadic until the end of the year. Prophylactic inoculations were given to the residents of the locality during the quiescent stage of the disease, i. e., from August to November. However, in spite of the inoculations, the disease had reached epidemic proportions toward the end of November. It was predominantly of a bubonic variety at first, but other types appeared later on. Contrary to the usual involvement of the inguinal group of lymph glands, buboes appeared in significant numbers in the upper part of the body. The 155 reported cases were treated with injections of dihydrostreptomycin hydrochloride or sulfate or streptomycin calcium chloride complex and tablets of sulfadiazine or sulfatriad (37.5 per cent sulfadiazine, 37.5 per cent sulfathiazole and 25 per cent sulfamerazine). No patient required more than two injections (i. e., 1 Gm.) of streptomycin for defervescence and alleviation of symptoms. A few patients were cured after a single injection. There were no signs of vestibular or auditory neurotoxicity, renal, allergic or any other reactions in this series and no untoward effect on pregnancy. Other drugs used in treatment included nicotinic acid (pelonin®), digitalis, bromides, stimulants, analgesics, brandy and, in certain cases, a 25 per cent solution of nikethamide (coramine®). The diet was restricted to milk, fruit juices and copious dextrose solution. Six of the 155 patients died. Five of these six presented the picture of severe cardiac involvement. The remainder recovered and did not experience any debilitating after effects. The author summarized his observations as follows: 1. There was a steady rise in the number of plague cases up to April, and there was a sharp decline in May, when temperatures were very high (112 F. in the shade). 2. Females showed a higher percentage of complications than did males. 3. There was a higher morbidity and mortality rate among persons not inoculated than in inoculated persons. 4. Patients in the age group of 5 to 15 years showed the highest mortality. 5. The duration of treatment had no effect on mortality. 6. The duration of the illness before treatment was started had almost no effect on mortality. 7. The number of cases occurring in a family did not influence mortality.

J. Neurol., Neurosurg. & Psychiat., London

13:243-326 (Nov.) 1950

*Infantile Hemiplegia Treated by Removing One Cerebral Hemisphere. R. A. Krynauw.—p. 243.
Symposium on Results of Operations on Acoustic Neuromas. G. Horrax, H. Olivecrona, J. B. Pennybacker and others.—p. 268.
Postoperative Intracranial Hypotension. J. Chrobski.—p. 280.
Electrical Activity of Human Brain During Artificial Sleep: I. Cyclical Pattern of Response to Barbiturate Sedation. B. D. Wyke.—p. 288.
Observations on Diaphragmatic Movement in Some Neurological Disorders. P. K. Robinson, W. H. Mosberg Jr. and R. C. W. Lowe. —p. 296.
Familial Ataxia, Deaf-Mutism, and Muscular Wasting. W. B. Matthews. —p. 307.
Nailbed Capillaries in Disseminated Sclerosis. J. H. D. Millar and D. G. F. Harriman.—p. 312.
Memory Studies in Electric Convulsion Therapy: II. Persistence of Verbal Response Patterns. M. Williams.—p. 314.

Removal of One Cerebral Hemisphere for Infantile Hemiplegia.—Krynauw reports on a new approach to the treatment of the infantile hemiplegias, namely, hemispherectomy. The histories are given of 12 patients between the ages of 8 months and 2 years who were subjected to this operation. Convulsive and mental changes rather than the hemiplegic manifestations were considered the chief indication for the operation. The author has come to consider mental deviations in the absence of epileptic phenomena and epileptic manifestations in the absence of definite mental or behavior disturbances as adequate indications for surgery. One of the 12 patients, a boy aged 2 years 3 months, died shortly after the operation. Ventriculograms are important in the determination of suitability for operation. If they show gross unilateral distortion, hemispherectomy is indicated. A generous lateral osteoplastic flap affords the room required for hemispherectomy. The hemisphere is divided into four segments by a vertical and transverse incision of the superolateral surface extending into the ventricle. Each quadrant is dissected out, working from within the ventricle. The whole of the cerebral cortex, with the exception of that portion medial to the tail of the caudate nucleus, is removed, together with the putamen and globus pallidus. A burr hole is made in the center of the bone flap for postoperative aspirations. One of the 12 patients, a boy aged 27 months, died shortly after the operation. In the others the epileptic manifestations ceased after operation without sedative medication and improvement in mentality exceeded the best expectations. Improvement in the mental sphere is dependent on the integrity of the remaining hemisphere and its ability to function normally, once it has been released from abnormal influences from the pathological hemisphere. Although return of function and power to the preoperative level was expected, improved tone and function beyond this level has been a happy by-product of the operation. Spasticity and clumsiness were lessened. Great improvement in personality, behavior and mentality was noted in all cases.

J. Obst. & Gynec. British Empire, Manchester

57:873-1050 (Dec.) 1950. **Partial Index**

Extra-Ovarian Brenner Tumour. T. G. Robinson.—p. 890.
Traumatic Intra-Uterine Adhesions. J. G. Asherman.—p. 892.
Maternal States in Relation to Congenital Malformations. C. O. Carter. —p. 897.
Vaginal Hysterectomy. F. J. Burke.—p. 912.
Combined Renal and Anterior Pituitary Necrosis. I. MacGillivray. —p. 924.
Management of Syphilitic Mother in Pregnancy. S. H. Riterband.—p. 931.
Primary Carcinoma of Fallopian Tube: Report of Case Superimposed on Tuberculous Salpingitis. L. A. Cruttenden and C. W. Taylor.—p. 937.
*Blood-Pressure and Prognosis in Toxaemia of Pregnancy. C. L. Mukherjee and A. D. T. Govan.—p. 941.
Case of Abdominal Pregnancy. P. Steptoe.—p. 949.
Rupture of Lower Uterine Segment During Normal Labour in Multigravidae. P. Simons.—p. 953.
Haemodynamic Changes in Kidney After Toxaemia of Late Pregnancy. R. A. Kenney, R. F. Lawrence and D. H. Miller.—p. 960.
Gangrene and Sequestrectomy of Uterus Following Lower Segment Caesarean Section for Obstructed Labour: with Review of Literature. W. R. Welply and P. Y. Chen.—p. 964.
Non-Pulmonary Tuberculosis and Pregnancy. G. B. Gibson.—p. 969.

Blood Pressure in Toxemia of Pregnancy.—An analysis was made of the systolic and diastolic pressures in 936 patients with hypertension in pregnancy in relation to their clinical condition and the course of the disease. The results indicate that the hyper-

tension of toxemia is predominantly diastolic. The hypertension remains balanced during pregnancy in cases of essential hypertension unless the pregnancy is further complicated by toxemia. The systolic-diastolic ratio in essential hypertension remains at 1.7 or more. In toxemia the hypertension is unbalanced and the ratio falls below 1.7. This provides an additional means of differentiating cases of essential hypertension from those of toxemia and also indicates when toxemia has been superadded to simple hypertension. As the ratio falls, toxemia manifestations become severer, and complications such as eclampsia tend to occur if the ratio drops below 1.5. A rapid fall in the ratio over a period of hours occurs before the onset of retroplacental hemorrhage.

Journal of Tropical Medicine and Hygiene, London

53:233-256 (Dec.) 1950

Clinical Investigations on Chemotherapeutic Treatment of Urinary Bilharziasis. Part I: Intravenous Trivalent Sodium Antimony Gluconate. J. M. Watson and G. Pringle.—p. 233.
*Ghoul Hand. D. B. Jelliffe.—p. 238.
Undulant Fever in Sudan: Successful Treatment of One Case with Chloramphenicol. M. A. Haseeb.—p. 241.

Ghoul Hand.—Jelliffe applies the term ghoul hand to a condition in which the skin of the palm is depigmented and of a corpselike, dead-white or tallow yellow color. This may be confined to the palms, but more often extends irregularly on to the dorsum. On this colorless skin are scattered blotchy areas of brownish hyperpigmentation that stand out prominently against the pale background like splashes of paint on a white surface. It is this mottled "dog's belly" appearance that is the most characteristic feature of the condition. The palmar skin is thickened, dry, inelastic, taut and slightly translucent. The surface is frequently smooth and glossy but may be scaly and cracked. The mobility of the hand is reduced, the thickened skin acting as a constricting armor. The palm is often curved in. Contractures, especially of the little and ring fingers, are common; the digits being bound in semiflexion by the fibrous, thickened and contracted palmar skin. Ghoul hand is usually symptomless and of slow, insidious onset. The author observed this condition frequently in an outpatient department in Nigeria and made clinical investigations on 20 patients with this disorder, giving particular attention to its possible association with yaws. He admits that it is difficult to prove beyond doubt that the cases of ghoul hand reported here are due to tertiary yaws alone, although the investigations seem to indicate that this is probable. If ghoul hand is due to tertiary yaws, the similarity of the condition to the lesions of chronic pinta, which is frequent in South America, is of interest.

Medical Journal of Australia, Sydney

2:917-948 (Dec. 23) 1950. **Partial Index**

Effects of Sodium Citrate in Lead Poisoning and Lead Absorption: Lead Absorption. D. O. Shiels, W. C. Thomas and G. R. Palmer.—p. 922.
*Bronchial Carcinoma. C. Harvey.—p. 928
Chemotherapy in Pulmonary Tuberculosis R. M. Ford.—p. 929.
Barbiturates in Spinal Anaesthesia. F. H. Shaw and K. H. Shankly.—p. 932.
Swelling on Either Side of Wrist. N. Little.—p. 934.

Bronchial Carcinoma.—Between 6 and 8 per cent of all carcinoma is bronchogenic. Earlier recognition of bronchial carcinoma is important, because now in most cases surgery is no longer of value when a diagnosis is made. The public must be educated to consult the physician when a cough persists for more than a month, and general practitioners must be urged to have a chest x-ray picture taken of any patient with symptoms that could be related to the respiratory system. In the great majority of cases, bronchial carcinoma is first detected by a radiological abnormality. The lesion may be indeterminate or masked, but the radiologist should make known any suspicious findings. He can probably make definite statements in only about 50 per cent of cases and perhaps suggest the diagnosis in another third. Of the remainder, he will probably miss 10 per cent entirely, in some cases because of pleural effusion. The author feels that physicians are not sufficiently conscious of the possibility of carcinoma in cases of respiratory disease. He objects to the common radiological diagnosis of "unresolved pneumonia," pointing out that in young persons it is most often due to tuberculosis or bronchiectasis, while in older persons the commonest cause is bronchial carcinoma. The search for malignant cells in the sputum or the secretions obtained through the bronchoscope might make the need for a diagnostic thoracotomy less frequent, but the author feels that in experienced hands exploratory thoracotomy carries little more risk than an exploratory laparotomy. Investigation must not be too prolonged. Four weeks should be an adequate study period in most cases. At the end of this time, if the diagnosis of carcinoma has not been ruled out and if the patient is a fair operative "risk," then thoracotomy should be performed, with the patient and staff prepared for pneumonectomy.

Medizinische Klinik, Munich

46:33-64 (Jan. 12) 1951. **Partial Index**

Antihistamine Preparations in the Prophylaxis of Focal and General Reactions During Removal of Focus of Infection. K. Fellinger.—p. 33.
Clinical Experiences with Pituitary Adrenocorticotropic Hormone (ACTH) in Chronic Polyarthritis. W. Kothé.—p. 35.
Articular Rheumatism Resulting from Disturbance in Sympathetic Regulation. W. Braeucker.—p. 41.
*Pyelographic Methods of Examination in Genitourinary Tuberculosis: Evaluation and Sequence of Use. H. Dettmar.—p. 47.

Pyelographic Methods in Urologic Examination.—There has been much discussion of the comparative values of excretory and retrograde urography in cases of urinary tuberculosis. Many are of the opinion that retrograde or ascending urography is indispensable for an exact diagnosis. Dettmar evaluates these two methods and shows that bilateral retrograde pyelography should not be used routinely, since it is often unnecessary and may be harmful. Careful clinical examination and excretory pyelography usually clarify the diagnosis. Only when these aids are inadequate should retrograde pyelography be done. Correct interpretation of the excretory urogram requires much experience. Decisions regarding the removal of the tuberculous kidney should be made only by those with experience in reading excretory urograms and in the other methods of urologic diagnosis. It is often said that retrograde pyelography is harmless. However, urinary passages are so sensitive in the presence of a tuberculous infection that instrumental manipulation involves significant danger. There have been reports of serious damage, such as repeated attacks of pyelonephritis. Death has even been known to result from bilateral retrograde pyelography. When pyelography is done on one side, there is often an increase in temperature, which generally subsides, but which may continue and necessitate nephrectomy.

Praxis, Bern

40:65-86 (Jan. 25) 1951. **Partial Index**

Serum Protein Picture. G. Riva.—p. 65.
*New Observations of Disease Due to Cat Scratches. F. Thélin and R. Martin-du-Pan.—p. 74.

Disease Due to Cat Scratches.—A new clinical entity known as "cat scratch disease" is described. This is a form of subacute regional lymphadenitis occurring in persons who have been scratched by cats. It is usually unaccompanied by signs of general illness except for an elevated sedimentation rate. The leukocyte count is normal, there is usually no fever and the patient frequently does not react to tuberculin. In all cases, however, the patient demonstrates a tuberculin type of cutaneous reaction to a presumably specific antigen obtained from involved lymph nodes. The pus aspirated from such nodes is always bacteriologically sterile. The adenopathy may involve only a single node, frequently the epitrochlear, or a chain of nodes, such as the axillary and supraclavicular. Occasionally the inguinal or submaxillary nodes are affected. The authors report seven cases of this disease in Swiss children. Three pairs of siblings in the group had recently played with cats. Four of the children had been scratched repeatedly by them. No cat could be traced in the environment of the seventh child. All children reacted positively to the stock antigen. The course of the adenitis was benign in all patients, and recovery occurred within several weeks to several months, occasionally after suppuration and spontaneous drainage. Treatment with aureomycin (25 mg. per kilogram of body weight daily for five days) seemed to hasten recovery in one patient. Penicillin was of no benefit. The cats that scratched the patients were not sick and did not react to the "specific" antigen. It was concluded that they simply transmitted the pathogenic agent mechanically.

BOOK REVIEWS

Public Health Engineering: A Textbook of the Principles of Environmental Sanitation. By Earle B. Phelps, Professor of Sanitary Science, University of Florida, and collaborating authors. Volume II, Part Three: The Food Contact. In collaboration with Walter D. Tiedeman, Chief of Milk and Restaurant Sanitation Section, New York State Department of Health, Albany. Cloth. $4. Pp. 213, with 35 illustrations. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16; Chapman & Hall, Ltd., 37-39 Essex St., Strand, London, W.C.2, 1950.

This volume of a textbook unique in its field comes in language form pleasant to read and free from the eccentricities of word or meaning often found among advanced specialists in environmental sanitation. Both the senior author and his collaborator are nationally known among medical and lay health officers, whether in local, state or federal service, for their long and distinguished careers in research, health administration and professional education.

The purpose of this volume is to present in a form useful not only to the sanitary or public health engineer, but also to the physician, health officer, the field sanitarian, the public health nurse, the health educator, laboratory director, veterinarian, vital statistician and commercial processor and distributor of foods, the biological, mechanical and administrative principles on which the protection of the consuming public is based and the practical enforcement of these through sanitary codes and rules and regulations of local and state health departments and boards with respect to foods, particularly milk and its products and shellfish.

While air and water as two of the three major contacts of man in the environmental sense are dealt with in the first volume, this part concentrates attention on the relation of food to disease and food control policies in the first 39 pages. Milk and its production and processing technologies take another 75 pages. Shellfish production and control are described with masterly thoroughness, simplicity and brevity in 16 pages. Public eating and drinking places take another 36 pages, and the handling and disposal of garbage, refuse and municipal wastes, together with rodent and other vermin control, are sufficiently described in 15 pages leaving three pages for an index that meets the reader's convenience. Illustrations are well chosen and well executed. References while not numerous are easily followed as footnotes and are basic and up-to-date.

Accuracy of statement is so characteristic of both authors in their considerable contributions over 20 to 50 years of research and official and professional writings that it is no surprise to find this quality coupled with simplicity of expression and brevity throughout the volume.

There is no other work dealing so adequately with major problems of environmental sanitation and so exactly appropriate to the needs of students and practitioners of public health. There are no more valued participants in the health department team than the public health or sanitary engineer and his field staff of trained sanitarians. This book will be welcomed in schools of medicine, as in schools of public health. The authors are to be warmly congratulated on their success in guiding sanitary practice on the basis of biology as one of the disciplines of public health engineering.

Biochemistry of Glucuronic Acid. By Neal E. Artz, Ph.D., and Elizabeth M. Osman, Ph.D. Cloth. $2.50. Pp. 103. Academic Press, Inc., 125 E. 23rd St., New York 10, 1950.

This is a review of literature pertaining to the metabolic role of glucuronic acid. The senior author, formerly associate professor of biochemistry at Syracuse University, has been concerned with the subject for some time. The stated purpose of the authors is to bring presently available information together as a service and possibly as a stimulus to those who, in view of the fact that glucuronic acid is obtainable for the first time in sufficient amounts to permit exhaustive study, may wish to undertake investigation in this field.

Methods that have been employed for quantitative determination of glucuronic acid are described and discussed, and it appears that no completely satisfactory procedure has yet been developed. The compound is not found in the free state, but has been identified as a constituent of complexes such as heparin, hyaluronic acid, chondroitin and mucoitin sulfuric acids and of a number of immunopolysaccharides. It is also present as a conjugate in normal blood and urine. The amount excreted increases significantly following administration of a variety of drugs. Studies aimed at disclosing the cite of origin and nature of the percursors of glucuronic acid are described, but results are somewhat contradictory. The compound apparently can be synthesized in the animal organism, but how glucuronic acid is metabolized after administration and whether such a condition as a glucuronic acid deficiency can exist have not been established. The function and significance of beta-glucuronidase, which occurs rather widely in animal tissues, is receiving increasing attention and is still to be established.

That endogenous glucuronic acid plays a role as a detoxicant has been accepted by many. The chapter on detoxication comprises a large portion of this work. Types of compounds that have been shown to undergo conjugation with glucuronic acid during metabolism are listed and illustrated by formulas. So little has actually been established concerning the real significance of this carbohydrate oxidation product, in spite of the rather voluminous literature bearing directly or indirectly on its metabolism, that it seems apparent that further investigation should prove fruitful.

Essays in Surgery Presented to Dr. W. E. Gallie on the Occasion of His Retirement from the Chair of Surgery in the University of Toronto. Cloth. $9.50. Pp. 584, with illustrations. University of Toronto Press, Toronto 5, Ontario, Canada; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, 1950.

The essays in this volume were compiled as a tribute to Dr. William Edward Gallie. These contributions are the result, in part at least, of his precepts, examples and teachings. Forty-three essays dealing with numerous surgical subjects are presented. The diversification of the subject matter stresses the fact that, although Dr. Gallie's chief interest was in the field of bone and joint surgery, he emphatically avoided overspecialization.

The first essay pertaining to heparin sodium in blood clotting and thrombosis is well written despite its brevity. A particular note of interest in this essay is that it illustrates the productivity that can result from interdepartmental research, in this case the departments of physiology and surgery. The essay entitled "The Gallie Operation for Recurrent Dislocation of the Shoulder" has been nicely presented by H. M. Coleman. An interesting and enlightening contribution was written by W. G. Carscadden, dealing with the preservation of digits by immediate skin grafting. The photography in this essay illustrates many of the points well. The quality of the illustrations on pages 96 and 104, which appear under the subject of end-bearing amputations, could have been improved on.

One of the outstanding chapters in this volume is the ofttimes neglected subject of pterygium colli. It is written by A. W. Farmer, who presents four interesting cases and is of the opinion that the best surgical procedure for correction of this defect is a large "Z" flap type of operation. An interesting study is to be found in the subject, age incidence of rupture of the supraspinatus tendon, by Grant. A summary is made of the results of 94 dissecting room subjects. Dr. James E. Bateman's essay on "The Operative Management of Peripheral Nerve Injuries" stresses the fact that early closure of wounds and chemotherapy have made possible more extensive reconstructions and improvements in nerve surgery. He states that "no nerve injury may now be singled out as having a hopeless prognosis." Dr. H. Wookey's contribution on surgical procedure in the upper and lower jaw in malignant disease sounds an encouraging note in the fact that removal of a part or the whole of the upper or lower jaw is feasible and that the deformity which results may be reduced

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

to a minimum with dental prostheses. One of the outstanding essays in this book is on "Diaphragmatic Hernia in Children" by S. A. Thomson. The clear, concise and authoritative writing of Dr. W. Boyd is again illustrated in his presentation of the subject of the spread of tumors. He stresses the point that a malignant tumor may spread by seven different routes, namely, tissue spaces, lymphatics, blood vessels, natural passages, transcoelomic, intraepithelial and innoculation.

The aforementioned are only a few of the subjects presented in this volume. The topics of bone surgery, chemotherapy, pancreatitis, craniocerebral war wounds, renal tuberculosis, duodenal ulcer and many others contribute to make a well rounded work. This tome can be recommended highly to anyone interested in an authoritative current review of modern surgical trends. It is indeed a fitting tribute to a man of Dr. Gallie's stature.

James Lind: Founder of Nautical Medicine. By Louis H. Roddis, Captain, Medical Corps, U. S. Navy. Cloth. $3. Pp. 177, with 8 illustrations. Henry Schuman, Inc., Publishers, 20 E. 70th St., New York 21, 1950.

This excellent biography of James Lind succeeds notably in associating the man and his works with the times and conditions in which he lived. The emphasis of the volume is on what Lind accomplished, his scientific demonstration of the prevention and cure for scurvy and his postulation of the fundamental principles of naval hygiene, rather than on his personal life about which little is known. Particularly satisfying is the integration of the subject with the broad panorama of nautical history and with the influence of scurvy, typhus, smallpox and other dreaded plagues at sea on the general history of civilization. The reader may be completely a landlubber and yet understand and appreciate this captivating biography.

The volume demonstrates clearly that there is no better way to gain an appreciation of medicine than through the study of its history. Its author paints an appalling picture of naval conditions prior to the mid nineteenth century, in the days when ships and fleets were depleted of their manpower by scurvy and contagious diseases. It is astonishing to realize that naval history and consequently world history were determined largely by the ability or inability of navies to bring men into action at crucial times according to the length of the sick list at the moment.

Captain Roddis makes no attempt to idolize James Lind. There is no need for that: the facts speak for themselves. The "line of battle" is sufficiently stirring without a Horatio Hornblower. James Lind makes the physician of fiction appear distinctly anemic, at best.

This book is pleasing in format and is suitably illustrated with well chosen and clearly reproduced illustrations. There are a bibliography of James Lind, sources of information on his life and works and on the general background of naval history and naval medicine and a chronology of events in his life in relation to events in the general, naval and medical history of the eighteenth century. There is also a satisfactory index. The book is highly recommended to all medical readers, from the student to the octogenerian.

"Your Prostate Gland": Letters from a Surgeon to His Father. By Reed M. Nesbit, M.D., Professor of Surgery, University of Michigan Medical School, Ann Arbor, Michigan. Cloth. $2. Pp. 50, with illustrations by Janet McLaughlin. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; The Ryerson Press, 299 Queen St., W., Toronto 2B, 1950.

This book consists of a series of letters written by a prominent urologist to his father, who was suffering from prostatic obstruction. The book reminds one of a somewhat similar series of letters written by a self-made businessman to his son. There are seven letters, and they present in simple language the subject of prostatic obstruction, including cancer. They follow the usual textbook order of anatomy, physiology, etiology, symptoms, diagnosis and treatment. One letter is devoted to transurethral resections, and another to cancer of the prostate. The material is clearly presented and gives a fine picture of the present day status of the treatment of cancer of the prostate. This book will answer many questions that might arise in the mind of the patient with prostatic obstruction.

Surgeons Twoe and a Barber: Being Some Account of the Life and Work of the Indian Medical Service (1600-1947). Compiled and furnished with introductory essay by Donald McDonald. With foreword by Lieut.-General Sir Bennett Hance, K.C.I.E., O.B.E., K.H.S. Cloth. 42s. Pp. 295, with illustrations. William Heinemann, Ltd., 99 Great Russell St., London, W.C.1, 1950.

India is a country that is fascinating to many, and this book helps explain some of the reasons for its fascination, particularly for those who have had an opportunity to become closely affiliated with the medical services and opportunities that exist there. The book is not a history of the Indian Medical Service, which was prepared earlier by another author. It is, however, an assignment undertaken by the author to bring up to date the role of the Indian Medical Service. The tenor of this book and the objective of the author probably are best reflected in some of the words from the foreword:

> India has come of age; and the claims of the health services, insistently pressed by the Indian Medical Service, are at last receiving the attention from the public and from official sources that is their due. An increasingly numerous and capable independent medical profession, the vast majority of whom have been trained by the officers of the Service, has come into existence and is able, ready and eager to assume its due place in the care of the health of its own people—a fact which, despite the denials of interested parties, fills the service with legitimate pride. The need for efficient health service, and for the medical and ancillary staff to provide them, is clamant; and its satisfaction alone will fully absorb the output of all training institutions—existing and to be provided—for many years to come.

If the Indian Medical Service should cease to exist as it has been known, those who have been associated with it can be sure that the service, as stated by Sir Bennett Hance in the foreword, "its ethics, its traditions and its achievements will live on as the inspiration of its successors and the yardstick by which their performance will be changed." The reader will find a fascinating portrayal of the discovery of the Indies, the beginnings of activities in the seventeenth century, the growth that occurred during the eighteenth and nineteenth centuries and the changes that took place in the twentieth.

Paul Ehrlich. By Martha Marquardt. With introduction by Sir Henry Dale. Cloth. $3.50. Pp. 255, with illustrations. Henry Schuman, Inc., Publishers, 20 E. 70th St., New York 21, 1951.

This biography is a sensitive and warmly personal account of the life of Paul Ehrlich, the discoverer of salvarsan (606). The author was Ehrlich's personal secretary from 1902 until his death in 1915 so that she is eminently qualified to record her firsthand observations of Ehrlich's daily work in his laboratory and at home. Where previously the man's scientific accomplishments have been recognized, his mental and spiritual greatness, his perpetual humility and his innate sympathy and kindliness toward his fellow man are now observed. The introduction by Sir Henry Dale confirms the subsequent story.

This is the story of Ehrlich's whole life, though it emphasizes the period during which the author worked for him. We learn of his early fascination with chemistry, his essential work in serum therapy, his development of "the side-chain theory," his growing preoccupation with chemotherapy and his discovery of salvarsan, which to him was only a step in the expansion of chemotherapy. The book is not an impersonal collection of facts and correspondence. It is, rather, a kaleidoscope of intimate glimpses into the cluttered laboratory and office in which Ehrlich performed much of his life work. The glimpses of his family life, while limited, serve to balance the material.

The way in which this book came to be written is not without interest. Miss Marquardt left Germany in 1929 for a voluntary exile in Paris where she remained through World War II. There she was discovered by Sir Almroth Wright in 1946 and brought to England where she is now collecting and collating a definitive edition of Ehrlich's papers for publication by the Royal Society.

This book is the only available personal record of Ehrlich's activities. A previous work by the same author was destroyed by the Nazis. The format is excellent, and the illustrations are both numerous and of particular interest since they include portraits of many contemporary scientists. Ehrlich's biographical data is summarized at the end, including chronologies of personal dates, doctorates, prizes of honor and orders bestowed on Ehrlich and his memberships in scientific societies.

The book is recommended especially to those readers whose knowledge of chemotherapy dates from the advent of the sulfonamides. Ehrlich's personal work ended in 1915, but modern chemotherapy is a direct outgrowth of his work and, more important, his theories.

Training in Clinical Psychology. Compiled and edited by Victor C. Raimy. By staff of Conference on Graduate Education in Clinical Psychology held at Boulder, Colorado in August of 1949 sponsored by American Psychological Association, under grant from National Institute of Mental Health, United States Public Health Service, Federal Security Agency. Cloth. $4; text edition; $3. Pp. 253. Prentice-Hall, Inc., 70 5th Ave., New York 11, 1950.

This book concerns problems of the training of clinical psychologists. It includes a consideration of goals, methods and therapeutic practices of that profession. Training methods involve the attempt to correlate concurrently both the theoretical and applied aspects of psychology in a thoroughly interrelated manner.

An introduction describing today's problem is presented by Robert H. Felix, M.D., director, National Institute of Mental Health. The book mentions present society's need for increased numbers of trained psychologists and describes the several professional levels of training. A "core curriculum" for training in clinical psychology is given, which has the stated goals of teaching content, developing skills, inculcating attitudes and organizing material in a manner wherein diagnostic and therapeutic techniques will be integrated with current theories of personality and behavior.

This book should be of particular value to beginning students in the field of clinical psychology for presentation of an over-all picture. For those involved with graduate instruction, Appendix A includes a recommended graduate training program.

Radiation Monitoring in Atomic Defense. By Dwight E. Gray, Chief, Navy Research Section, Library of Congress, Washington, D. C., and John H. Martens. Cloth. $2. Pp. 122, with 20 illustrations. D. Van Nostrand Company, Inc., 250 4th Ave., New York 3; 228 Bloor St., W., Toronto 5; Macmillan & Co., Ltd., 10 St. Martin's St., Leicester Sq., London, W.C.2, 1951.

The preface states that this book is based on radiological plans and technics developed by the Federal Civil Defense Administration and the Atomic Energy Commission. Three opening chapters briefly sketch the nature of nuclear radiations and indicate the differences between ordinary explosions and those of atomic bombs. A distinction is made between immediate and residual radiations, and the means used to detect and measure residual ionizing radiations are described in general terms. The second half of the book pictures and discusses particular instruments now available for detecting, measuring and recording such radiations; these instruments include the Geiger counter survey meter, the ionization chamber survey meter, the proportional alpha counter, pocket chambers and dosimeters, film badge dosimeters and the Atomic Energy Commission emergency monitoring kit. The book concludes with information on future defense monitoring instruments and standard calibration sources; it also contains a bibliography and index. It is to be commended for its concrete, straightforward style and will prove extremely useful to professional and nonprofessional groups alike.

Wheeler and Jack's Handbook of Medicine. Revised by Robert Coope, M.D., B.Sc., F.R.C.P., Physician, Liverpool Royal Infirmary, Liverpool. Eleventh edition. Cloth. $5. Pp. 648, with 62 illustrations. Williams & Wilkins Co., Mount Royal and Guilford Aves., Baltimore 2, 1950.

This book is designed to help medical students pass their final examinations. While the subjects discussed are numerous and the field very broad, the individual section on each disease is intentionally brief. The author aims only to give the fundamentals, with which the students may observe these conditions in the wards and possibly elsewhere for the details. The discussion of appendicitis, for example, occupies only two pages, including the etiology, morbid anatomy, symptoms and treatment. That this handbook has served its purpose is indicated by the fact that 11 editions have been published since 1894. The last previous edition was published 10 years ago. Dr. Robert Coope is a lecturer in clinical medicine, applied physiology and clinical chemistry at the University of Liverpool.

Oral Pathology: A Histological, Roentgenological, and Clinical Study of the Diseases of the Teeth, Jaws, and Mouth. By Kurt H. Thoma, D.M.D., F.D.S., R.C.S., Brackett Professor of Oral Pathology, Harvard University, Cambridge, Mass. Third edition. Cloth. $17.50. Pp. 1592, with 1660 illustrations. C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, 1950.

The author presents in this book a histological, roentgenological and clinical study of the diseases of the teeth, jaws and mouth. The preface states: "This textbook on pathology not only covers the histologic study of oral disease, but also endeavors to correlate the microscopic picture with the roentgen and clinical findings, thereby demonstrating the value of pathology as a vital part of clinical practice. Most texts concentrate on dental pathology and treat the remaining subject matter in a cursory manner. This may have been adequate when dentists concerned themselves only with the treatment and filling of teeth, but today the student demands a wider horizon, because as a practitioner he may be consulted about conditions of the oral mucosa and jaws which may be due not only to local infection or tumor formation, but often to somatic disease. Thus, the alert dental diagnostician is often in a position to give valuable advice to his patient so that the latter may receive proper medical attention. Blood dyscrasia, food deficiencies, metabolic disturbances, and many skin diseases come under this heading, and it may be truly said that the tongue and oral mucosa constitute a barometer, a mirror which reflects the state of health of the patient."

This volume comes as nearly as is possible to serving as a textbook for the student and at the same time being complete enough to be of great value to the practitioner and teacher. Little fault, if any, can be found in the coverage of the subject in each chapter. The reader who desires a more detailed treatment of the subject in which he is interested can find it by referring to the comprehensive and useful list of references given at the end of each chapter. As an example, chapter 8 on dental caries covers 73 pages with a list of 325 references. The remaining 46 chapters follow this pattern, with few exceptions.

This book is well written and adequately covers the field of oral pathology. Illustrations are excellent and well chosen and freely used throughout the text. The paper is of good quality and the type extremely readable. Dr. Thoma has made a valuable and extensive contribution to the field of oral pathology. This textbook is recommended for anyone interested in oral pathology.

Elsevier's Encyclopædia of Organic Chemistry. Edited by F. Radt. Founded by E. Josephy and F. Radt. Series III, Carboisocylic Condensed Compounds. Volume 12B: Naphthalene. A. Compounds Containing One Naphthalene Nucleus. Pp. 1053-2187: Hydroxy Compounds. Cloth. $104; $91 to subscribers to series III; $78 to subscribers to complete work. Pp. 1053-2187. Elsevier Publishing Company, Inc., 250 Fifth Ave., New York 3; 118 Spuistraat, Amsterdam-C., Netherlands; Cleaver-Hume Press, 42a S. Audley St., London, W.1, 1950.

The sixth volume to appear, this is the third devoted to a description of compounds having the naphthalene ring structure. This book includes the hydroxy derivatives of compounds containing one naphthalene nucleus and those naphthols containing halogens, nitro groups, amino groups and azo compounds. This volume includes literature references through 1944 and those references concerned with structure of compounds up to 1950. As in previous volumes, the physiologic properties of the more widely known substances are presented with literature references. Among those substances for which this information is included are 1-naphthol, 2-naphthol, 2-4-dinitro-1-naphthol, orange I, orange II and many others. Menadiol and vitamin K, hydroquinone (dihydrovitamin K) and their numerous derivatives having antihemorrhagic activity are described.

Exotische Krankheiten und Krankheitsverläufe. Von Dr.med. F. O. Höring, apl. Prof. für. innere und Tropenmedizin an der Universität Tübingen. Cloth. 36 marks; $8.55. Pp. 407, with 51 illustrations. Georg Thieme, Diemershaldenstrasse 47, (14a) Stuttgart O; agents for U. S. A.: Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1950.

This volume includes a complete discussion of all tropical diseases. The emphasis is placed on the clinical course rather than on the discussion of the pathogenic agents. The discussion is up to date, the book attractively printed. It does not contain any illustrations except for an occasional temperature chart.

QUERIES AND MINOR NOTES

TREATMENT OF WHOOPING COUGH

TO THE EDITOR:—*What effective treatment would you advise against whooping cough?* *M.D., Belgian Congo.*

ANSWER.—The following outline perhaps is representative of various modes of management of whooping cough.

1. Expert medical and nursing care: hospitalization at proper medical centers when indicated (young infants and seriously ill older patients), specially trained personnel, 24 hour attendance, to avoid sudden death from acute asphyxial paroxysms of respiratory or neurologic origin.

2. Measures to maintain adequate oxygenation: maintenance of clear respiratory passages (postural drainage; aspiration of nose, throat, or both), supply of atmosphere rich in oxygen (oxygen tents or mechanical hoods), manual artificial respiration to tide patients over periods of acute asphyxia secondary to severe paroxysms or convulsions.

3. Maintenance of adequate nutritional status: oral alimentation (special technics when indicated, such as medicine dropper, gavage, refeeding when vomiting occurs shortly after feeding, frequent small feedings, low fat diet, preprandial and postprandial aspiration to remove mucus, preprandial medication with drugs such as phenobarbital and/or tincture of belladonna); parenteral alimentation (electrolytes adapted to acidosis or alkalosis, with added dextrose and protein hydrolysates when specially indicated; plasma or blood for special cases).

4. Specific serum therapy (only human serums are recommended): for infants in particular and for disease of moderate to marked severity in any age period, particularly in presence of various complications (respiratory, nutritional, neurologic). The following human serums are available: hyperimmune types which are unconcentrated, partially concentrated (lyophilized serum) or markedly concentrated (concentrated globulin fraction, commercially available). The serum may be given intramuscularly. Only the unconcentrated human serum should be administered intravenously, after being significantly diluted with an appropriate fluid. The volume and number of injections are governed by the severity of the individual case. The use of serum seems to reduce the incidence of complications, the mortality and the course of the uncomplicated disease.

5. Chemotherapeusis: indicated to shorten and attenuate the course of the uncomplicated disease and to control secondary infections (respiratory, gastrointestinal, and neurologic) in the complicated cases. The materials available are sulfonamides (especially sulfadiazine and gantrisin®—preferably the latter), penicillin (most valuable parenterally), streptomycin (aerosol or injection therapy) and chloramphenicol or aureomycin. Concerning clinical results, it is accepted that the various compounds (particularly aureomycin and chloramphenicol) reduce the incidence of complications. Controversy still surrounds the question of the effect of chemotherapy on the course of the uncomplicated disease. However, it is obvious that chemotherapy, particularly with aureomycin or chloramphenicol, is indicated in all cases, to attain the known and anticipated effects of these drugs.

6. Management of complications: (*a*) gastrointestinal (vomiting, diarrhea, anorexia, sublingual ulcers, acid-base disturbances of the blood, malnutrition); (*b*) respiratory (otitis media, acute respiratory arrest with asphyxia, nasopharyngitis, persistent cough, atelectasis, pneumonia, emphysema, pulmonary tuberculosis, nasal hemorrhage); (*c*) neurologic (aphasia, behavior disturbances, inflammatory complications, such as meningitis due to Hemophilus influenzae, Pneumococcus, tuberculosis; hemorrhages of massive or scattered type; convulsions of varied etiology); (*d*) cardiovascular ("shock" following convulsions, severe paroxysms of coughing, dehydration and electrolyte imbalance).

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

PEYRONIE'S DISEASE

TO THE EDITOR:—*Nine months ago, a man reported that he noticed during a "urinary erection," a decided bend at the dorsal side of the penis. He tried to force the penis into a straight position, but the bend resisted his effort. Returning to me several times during the intervening months, he reported that the bend persisted, seemingly becoming more acute but not increasing laterally. This man is 80 years old, with moderate enlargement of the prostate. A few days ago, another man came to me with the same complaint. He is 59 years old with no prostatic enlargement. He stated that sexual intercourse will be impossible. In both these cases the bend occurred suddenly. In 50 years of practice, I have never encountered any case similar to these two. I will be interested in any information you can give me.*

G. W. Moore, M.D., Bay City, Mich.

ANSWER.—The description of the symptoms of these two patients suggests classic Peyronie's disease (induration of the corpora cavernosa). The bending is caused by the irregular formation of fibrous or scarlike tissue plaques in the sheath or septum of the corpora cavernosa. The cause is unknown. There is no evidence of inflammation or carcinoma. Rarely are men under 30 years of age affected. Differences of opinion exist regarding treatment. Recurrence and loss of potency after surgical excision of the lesion may occur. Radium and roentgen ray therapy often halt the progress of the disease. Some good results have recently been reported with orally administered tocopherols; eprolin (a concentrate of natural alpha, beta and gamma tocopherols) in 100 mg. doses three times a day or tocopherol acetate in the same dosage continued for several months, then intermittently, seems to cause some regression of the lesion. Reassurance of the patient from time to time is in some cases important.

CANKER SORES

TO THE EDITOR:—*I have been treating a 28 year old blond woman for aphthous stomatitis (canker sore) without success. She has had these sores most of her life and is almost never without them for longer than a week at a time. They are worse just before menses and usually occur in crops over the buccal mucosa, tongue and over the pharynx. The lesions consist of discrete, yellow, slightly elevated areas surrounded by a reddish border. I have treated her with biweekly vaccinations with smallpox vaccine, weekly injections of bismuth and oxophenarsine hydrochloride (mapharsen®) and 5 per cent sodium perborate mouth washes. The patient thinks there may be some improvement in the number and painfulness of the lesions, but they still occur with exasperating regularity. I should appreciate your recommendations.*

J. P. Hodges, M.D., Center Point, Ala.

ANSWER.—Aphthous stomatitis always requires an allergic study. Most allergists agree that food allergy is the usual cause. Walnuts, spices and fruits are to be suspected; other foods commonly responsible for allergy must be considered. Because of the usual impossibility of determining clinical food allergy with skin tests Rowe (Elimination Diets and the Patient's Allergies, ed. 2, Philadelphia, Lea & Febiger, 1944) has long prescribed his fruit-free elimination diet, which excludes all fruits, milk, eggs, wheat, chocolate, spices and certain other foods, when canker sores and, in fact, other gastrointestinal allergies occur. He holds that the unfortunate delay in recognition of food allergy as a common cause of canker sores and other gastrointestinal allergy is due to the failure to realize the fallibility of the skin test in the determination of such allergy and failure to use trial diets accurately for the study of such allergy. The published menus and recipes for bakery products for this diet must be used. No trace of the suspected food can be taken, and satisfactory weight must be maintained with the foods in the diet. If constant canker sores are present,

relief in two to three weeks, lasting for one to two weeks, indicates exclusion of allergenic causative foods. If attacks occur every two to six weeks, then relief must continue while the elimination diet is used for at least twice as long as previous periods of intervening relief. When relief is assured, the individual foods can be added, each being eaten daily for five to seven days before another is added. Foods that cause the lesions to recur must be excluded, usually for months or even for longer periods, before tolerance for them returns.

Canker sores also occur from allergy to various drugs and occasionally to allergens in dentifrices and ingredients of mouth washes. Bacterial allergy may be a rare cause, as suggested by crops of such lesions following injections of certain vaccines and relief of such lesions when foci of infection are removed. The possibility of an electrolytic reaction between gold and amalgam fillings has been suggested in the literature. Canker sores occur, moreover, in debilitated patients, but in them the major cause may be food allergy.

In almost all patients with aphthous stomatitis, other oral allergic reactions, gastric distention, substernal soreness and fulness, nausea, vomiting, abdominal soreness, pain or distress, diarrhea, mucous colitis, constipation or other gastrointestinal symptoms usually due to food allergy exist. Of course all other causes of such gastrointestinal symptoms must be thoroughly ruled out by indicated laboratory investigations and roentgen ray studies and physical examination. Moreover, other recognized manifestations of allergy may be present. Usually the dietary history, or, occasionally, the drug history reveals evidence of possible food or drug allergy. In rare cases, canker sores with or without allergic stomatitis, glossitis or pharyngitis may be the only manifestation of clinical allergy.

In view of the failure of the medicaments mentioned in the query, this study of allergy, especially to foods, is required. This must be accurately done, however, for dependable results.

MYOSITIS OSSIFICANS

To the Editor:—*My 6 year old son was injured in a football game when another player stepped on his right arm above the elbow. The cleats caused considerable damage to the muscle, resulting in hemorrhage and hematoma with considerable swelling. Roentgenograms revealed no fracture, but the boy was able to extend his arm only about two thirds of normal. About two weeks after injury a hard mass was outlined and roentgenograms revealed calcification in the brachialis anticus muscle. At present there is no pain and practically no discomfort and extension is still about two thirds complete. Kindly suggest treatment for this condition.*

Daniel L. Hollis, M.D., Biloxi, Miss.

This inquiry was referred to two authorities, whose respective replies follow.—Ed.

Answer.—The findings in this inquiry are typical of myositis ossificans resulting from trauma. The brachialis anticus muscle is the favorite site for this, especially after injury about the elbow joint. In this instance, in all probability, there has been some tearing of the periosteum and progressive development of callus in the muscle proper. The history of onset is typical. Such calcification proceeds fairly rapidly, finally reaches a point where it remains stationary and then, in many instances, shows evidence of regression.

It is important during the formation period that further trauma be prevented. There should be no attempt to forcibly stretch the elbow. Normal use within the limits of pain and discomfort, in all probability, will not aggravate this condition. If, after the bone becomes mature, it should interfere with function, some thought might be given to surgical excision. Should this be done, there is always some possibility of recurrence of the calcification, especially in this area.

Answer.—Clinically and roentgenologically this patient has myositis ossificans of the brachialis anticus muscle, which is not an uncommon condition. In the acute or subacute stage, rest of the elbow in a plaster cast for a period of four to six weeks is advisable. At the end of this time the cast may be bivalved and diathermy together with light massage used. If the condition remains for a prolonged period of time without reversal of the process of precipitating calcium in this muscle, definite bone formation with trabeculation will result. Not until mature bone has developed should surgery be considered, and then surgical excision of the entire mass is indicated. At no time should either active or passive stretching exercises for the elbow during any phase of myositis ossificans be permitted. This would cause increasing damage to the muscle.

The prognosis in most cases with conservative treatment, by the use of complete rest of the part, diathermy and gentle massage, is good. Also, in the late stage, after mature bone has formed, the prognosis is good with surgical excision.

CARDIAC ARRHYTHMIA IN A MYASTHENIC

To the Editor:—*In view of the known effect of quinine on myasthenia gravis, is the administration of quinidine sulfate or lactate contraindicated in myasthenic patients, assuming that the cardiac arrhythmia is amenable to quinidine?*

Nicholas M. Greene, M.D., Cambridge, Mass.

Answer.—There are no reported instances in which quinidine, or any of its salts, has been administered to patients with myasthenia gravis. However, quinidine is the dextrorotatory isomer of quinine, and it has physiological action similar to that of the levorotatory quinine. Both quinidine and quinine "are depressant to skeletal . . . muscle," and both prolong the refractory phase and contractility (Goodman, L., and Gilman, A.: Pharmacological Basis of Therapeutics, New York, The MacMillan Company, 1941, p. 539). Quinidine, like quinine, antagonizes the muscle contraction produced by acetylcholine or neostigmine (Krantz, J. C. Jr., and Carr, C. J.: Pharmacological Principles of Medical Practice, Baltimore, Williams and Wilkins, 1949, p. 721). The response of normal mammalian muscle to injected acetylcholine is abolished by quinine, owing largely to the curariform action of quinine (Harvey, A. M.: Actions of Quinine on Skeletal Muscle, *J. Physiol.* **95**:45, 1939).

The action of quinine in a patient with myasthenia gravis, as recorded by Harvey and Whitehill (*Bull. Johns Hopkins Hosp.* **61**:216, 1937) establishes the fact that quinine causes an increase in symptoms of the disease, and, since the actions of quinidine on skeletal muscle are identical with those of quinine, there is every reason to believe that quinidine would have the same effect when administered to a myasthenic patient.

It appears certain, therefore, that it would be hazardous to administer quinidine sulfate or lactate in myasthenia gravis in the treatment of a cardiac arrhythmia or for any other reason except under the most urgent emergency circumstances. In this case, should quinidine be given, its unfavorable action on the status of the myasthenia could be controlled by the injection of neostigmine, which would also vitiate its effect on the cardiac musculature. Therefore, it is preferable to refrain from the administration of quinidine to myasthenic patients. An attempt should be made to control cardiac arrhythmias by other methods.

SWOLLEN LIPS

To the Editor:—*A 43 year old male architect has greatly swollen lips, which itch and burn. The lips became swollen about Aug. 1, 1950, and became increasingly worse with no periodicity or remissions. Physical examination revealed no cause. There has been no change in residence or occupation. Needless to say, I have tested him for external contacts. He does not handle pencils, wood, crayon or ink. I have tried special diets.*

M.D., Massachusetts.

Answer.—Gross swelling of the lips, with itching and burning but no necrosis, probably means angioneurotic edema, despite the lack of remission. This "solid edema" is considered to be due to hypersensitivity, although it is described as a "symptom complex," and focal infection, endocrine disorders, infectious diseases and emotional disturbances have been incriminated. Drug idiosyncracy, even with a fixed eruption, is not probable but should be considered. It may occur after years of drug usage, and results of patch tests are often negative. Contact stomatitis is a similar, often localized, reaction, and results of patch tests are usually positive. Lymphangiectasis

is a soft yellowish swelling without inflammation or the sensory symptoms. The problem requires acute medical detection, and the questioner has made a good start. A few irritants or antigens that have been reported to be sometimes causative, but which are not mentioned in the question, are denture materials, alcohol-containing beverages, cosmetics of women outside the family, smoking and perhaps certain foods for which tests have not been made. Eosinophilia may be significant. Treatment must depend on solution of the complex problem of etiology, with symptomatic therapy used meanwhile. Epinephrine injection, ephedrine capsules and antihistamines (in the form of pills, capsules or ointments) may have both therapeutic and diagnostic value.

ESTIMATION OF THIOCYANATE LEVEL

To the Editor:—*I have checked the urine of patients for thiocyanates using the same procedure as for blood thiocyanates. The results have varied from 0 to 26 mg. per 100 cc. Patients who show increased amounts appear to have a disease of unknown etiology or a virus condition. The patient who had 26 mg. per 100 cc. was given a diagnosis of severe aphthous stomatitis. Other patients had vague gastrointestinal upsets. In this group I have been able to tell which will have a higher thiocyanate, 0.6 to 5 mg. per 100 cc., from history and from observation of tongue and throat. Some patients with virus pneumonia also show this finding. One case diagnosed periarteritis nodosa and one case of sarcoidosis had similar findings. The urine of most of the patients has a* p_H *of 7. Two patients had a serum* p_H *of 7.8 and 7.9. I would like to know if this test can be used for urine as I have done. If not, what would be the cause of variation in color reaction?*

George C. Furr, M.D., Clarksdale, Miss.

Answer.—The quantitative estimation of thiocyanates is conventionally effected by the measurement of the red color developed by the addition of acidified ferric nitrate. This test can be applied to serum, plasma or urine, provided all proteins present are removed by precipitation. Some urine samples become turbid after addition of the protein precipitants, and such turbidities interfere with electrometric color measurements. Centrifugation will normally clarify these solutions. High thiocyanate levels occur as a result of thiocyanate therapy for hypertension and also has been reported to be due to tobacco smoking, low protein intake and exposure to acrylonitrile fumes in industrial establishments.

CONGENITAL SYPHILIS

To the Editor:—*What treatment should be given a newborn with a doubtful cord serology? The Kolmer reaction was positive and the Kahn negative. The baby weighed 10 pounds (4,536 Gm.) at birth; there was no definite evidence of congenital syphilis, although there is a suggestive "saddle nose." The mother was first seen in the last trimester and had a positive Kolmer and a negative Kahn reaction. She had received treatment three years ago. She was started on the Army 26 week treatment and received 20 intravenous injections of 0.6 Gm. of oxophenarsine hydrochloride and 5 injections of 1 cc. of bismuth prior to delivery. The mother's serologic reaction (specimen taken from arm) was negative at the time of delivery.* *F. G. Freeman, M.D., Pratt, Kan.*

Answer.—This infant probably has congenital syphilis and should immediately be treated with aqueous penicillin, 20,000 units, intramuscularly, daily for 15 days. Follow-up serology tests for many years are recommended. The mother presumably still has syphilis and should be treated with intramuscular injections of penicillin, 600,000 units daily for 10 days. Eight weeks after treatment Wassermann and Kahn tests should be made. If results are negative, a complete spinal fluid examination, including a Wassermann test, should be made. If the serologic reactions are positive, a record of the quantitative titer of the blood is helpful in the follow-up care. If the quantitative blood titer increases additional therapy is necessary. A positive spinal fluid reaction would necessitate additional penicillin and/or aureomycin therapy.

ANEMIA

To the Editor:—*A 55 year old man has a hemoglobin level of 7 Gm. and a blood cell count of 2,290,000. The white blood cell and differential counts are normal. There is free hydrochloric acid in the gastric juice. No cause for the anemia has been found. Could his occupation be a cause? He mixes by hand amorphous red phosphorus, pulverized tin and pulverized copper. This is then rubbed by hand on metal chains with graphite. He has been engaged in this occupation for many years.* *M.D., Rhode Island.*

Answer.—The patient's long use of the mixture and its frequent employment in jewelry shops, apparently without noticeable anemia, strongly suggest that there is no connection between the procedure and the anemia; furthermore, no evidence thereto has been found in the literature. Of the ingredients composing the powder, amorphous red phosphorus—the kind used in safety matches—can cause skin lesions but is not known to be hemolytic or a cause of anemia. Nor is powdered tin known to be toxic. Long exposure to copper has been shown to be followed by various visceral lesions, such as Mallory's (unconfirmed) variety of human cirrhosis of the liver, and it is conceivable that similar damage to the bone marrow might cause a dyshemopoietic anemia. Also, amorphous copper contains about 0.1 per cent arsenic, which in the form of hydrogen arsenide gas (AsH_3) is a powerful blood poison. However, it may be safely accepted that it is to the highest degree unlikely that the copper is a causative factor in this case. Nor can graphite be incriminated on any factual basis.

The hematologic data rule out primary blood diseases, such as pernicious anemia, the leukemias and congenital hemolytic icterus, but do not exclude a number of secondary forms. A family history of similar anemia, jaundice or splenomegaly would be significant. Among other studies, fragility, reticulocyte percentage and bilirubinemia tests, sternal marrow biopsy and controlled responses to vitamins, hematinics and special diets should be made. Frequent check-up is important in revealing trends that may help in the establishment of a correct diagnosis.

POSTPARTUM PLASMA AND ARTHRITIS

To the Editor:—*Where can I get information concerning the use of postpartum blood plasma in the treatment of arthritis?*

M. E. Monroe, M.D., Hartford, Wis.

Answer.—L. W. Granirer (Science, **111**:204 [Feb. 24] 1950) first reported that sustained remission can be produced in rheumatoid arthritis by the administration of suitable amounts of postpartum plasma. The remission was characterized by an improved sense of well-being, brighter outlook, increased appetite, a disappearance of joint symptoms and microcytic anemia, gain in weight and restoration to normal of the albumin globulin ratio. In general, the characteristic response was a striking clinical improvement. There were no toxic effects, and in 320 postpartum plasma transfusions, there were no cases of homologous serum hepatitis. The longest remission following cessation of therapy was 16 weeks, and the shortest was three weeks.

Despite the proteinemia, the mothers from whom this plasma was taken had no anemia or edema. The occurrence of pregnancy in patients with rheumatoid arthritis produces a partial or complete remission in a high percentage of cases. There is suggestive evidence that this behavior is not due solely to steroidal factors.

PROCAINE TO OVERCOME PAIN OF INJECTIONS

To the Editor:—*Is there any objection to the use of small amounts of procaine mixed with liver extract or vitamins for parenteral administration for prevention of some of the local pain following injection?*

Frank Springer, M.D., Elmwood, Wis.

Answer.—Chemical or physiological incompatibility between small amounts of procaine and liver extract or vitamins in mixtures for parenteral use has not been reported. Solutions containing small quantities of 0.5 per cent procaine hydrochloride with crude liver extract or thiamine have been administered intramuscularly with apparent safety and efficacy.

SARCOIDOSIS

To the Editor:—*I cannot find much in the textbooks on sarcoid. My problem involves a man in whom the tumors involve the inguinal canal structures, proved by biopsy. I am especially interested in knowing whether the antibiotics are effective.* *Walter E. Heinz, M.D., Willmar, Minn.*

Answer.—So far none of the available antibiotics have been effective in the treatment of sarcoidosis. Some patients have responded slowly after the use of urethane as it is administered in patients with chronic leukemia. Others have had a slow and progressive regression of the lesion following conservative rest treatment as is practiced in patients with tuberculosis.

BIRTH CONTROL AND CHRONIC CYSTIC MASTITIS

To the Editor:—*We do not fully agree with the answer to the query on "Birth Control and Chronic Cystic Mastitis" in* The Journal, *Dec. 30, 1950, page 1602. An unequivocal statement that women with chronic cystic mastitis should avoid using diaphragms for contraception is a serious matter if one considers the frequency with which this condition is diagnosed in women of childbearing age and the widespread use of the diaphragm for contraception. The answer implies that contraception increases the risk of cancer of the breast in women with chronic cystic mastitis and states that use of the diaphragm for contraception increases the risk of cancer of the cervix. We believe that neither of these theses can be proved, that the latter is incorrect and that the former requires considerable qualification.*

Chronic cystic mastitis is a term used widely and loosely, and no uniform criteria exist on which one could base such a diagnosis. The clinician frequently has difficulty differentiating the physiological changes in a woman's breast from the lesions of chronic cystic mastitis. The criteria for histological diagnosis vary greatly among pathologists. The varied breast lesions included by this term probably have no common etiologic factor, and it is likely that only a small percentage of patients with chronic cystic mastitis have a significant endocrine dysfunction.

Whether chronic cystic mastitis predisposes to cancer of the breast has been hotly debated. The statistical studies of Warren (The Relation of Chronic Mastitis to Carcinoma of the Breast, Surg., Gynec. & Obst. **71**:257 [Sept.] 1940) *indicate that it does, but other authorities cited in the study by Foote and Stewart (Comparative Studies of Cancerous Versus Non-Cancerous Breasts,* Ann. Surg. **121**:6 [Jan.] **121**:197 [Feb.] 1945) *do not believe that the extent of predisposition is significant except in the few cases with papillary hyperplasia. While statistical studies show that cancer of the breast is more frequent in women who have not borne children and in those who, having borne them, do not suckle them normally, these data do not prove that women with chronic cystic mastitis who do not become pregnant are more susceptible to cancer of the breast than other women who do not become pregnant. The use of the diaphragm for contraception is certainly not specific in this relationship, and other means of contraception should have the same effect, if any. Furthermore, contraception is generally employed as a method for properly spacing pregnancies and not for their permanent prevention.*

The predisposition of patients with chronic cystic mastitis to carcinoma of the cervix is even less definite. In considering only those patients exhibiting chronic cystic mastitis who also have hormonal imbalance, we know of no proof to support the contention that hormonal imbalance is a significant factor in producing cervical cancer. Furthermore, the answer in The Journal *indicates that vaginal diaphragms (or the vaginal jelly usually used with them) cause chronic irritation and that this irritation may cause cancer. We are not aware of any proof for this claim. As a matter of fact, acid vaginal jellies similar to those used with a contraceptive diaphragm have proved beneficial in the treatment of certain cervical lesions and irritations. Even if one grants that diaphragm contraception may cause irritation of the cervix, this irritation must be greater than that produced by childbearing, else the argument against diaphragms cannot hold. Such an assumption, in our opinion, is absurd. On the other hand, the clinical experience of many gynecologists has demonstrated that vaginal delivery is an extremely important cause of chronic cervicitis, which in turn is an important factor in the development of cervical cancer. Cervical cancer is commoner in women who have borne children than in unmarried or childless women of comparable age. Thus, if one were solely interested in preventing cervical cancer, one would argue more logically for diaphragm contraception than against it.*

We have no interest in promoting contraception in general or in advocating specific methods of contraception. We believe, notwithstanding, that The Journal's *unqualified rejection of the diaphragm as a method of contraception for use by women exhibiting chronic cystic mastitis is not justified, if it is based on the claim that such use may cause cervical and breast cancer. The evidence is insufficient to warrant a prohibition of this method of contraception among the probable thousands of women having chronic cystic mastitis who now use it.*

William T. Fitts Jr., M.D.,
Assistant Professor of Surgery;
George L. Hoffman Jr., M.D.,
Assistant Professor of Obstetrics and Gynecology,
Hospital of the University of Pennsylvania,
3400 Spruce Street, Philadelphia 4.

To the Editor:—*In* The Journal *of December 30, the reply to the query on "Birth Control and Chronic Cystic Mastitis" seems to be so misleading that I believe it calls for correction. I think your readers should be informed that use of a diaphragm pessary would have no greater and no different an indirect influence, if any, on chronic cystic mastitis of the breasts than would absence of a pregnancy, whether that absence was due to use of a contraceptive, infertility or continence. That there is any such influence, furthermore, is by no means so well established a fact as the reply to the query would indicate.*

Even more misleading is the statement that "the use of any instrument which might act as an irritant would be dangerous." The inference is that a diaphragm is an "instrument," which is not the case in the usual use of the word, and that it is an "irritant," which is never the case if it has been fitted by a competent physician.

William T. Kennedy, M.D.,
Chairman, Medical Committee,
Planned Parenthood Federation of America, Inc.,
501 Madison Avenue,
New York 22.

To the Editor:—*I have received two letters insisting that because I am Editor of the Yearbook of Obstetrics and Gynecology I should comment on the answer to the query on "Birth Control and Chronic Cystic Mastitis." I assure you that most gynecologists would disagree vehemently with the answer. There is no basis in fact for the following statements: "The use of a diaphragm pessary would indirectly influence the chronic cystic mastitis from which your patient suffers. This would come about from the continued ovary stimulation to the breast without pregnancy intervening to permit normal physiological function. . . . Carcinoma of the breast is more frequent in women who have had children but did not suckle them and married women who have prevented pregnancy. . . . Inasmuch as the chronic cystic mastitis is evidence of endocrine dysfunction in this patient, the use of any instrument which might act as an irritant would be dangerous, because chronic irritation in a patient predisposed to malignant disease may hasten the neoplastic changes." I should like to know on what statistical evidence these statements are based.*

J. P. Greenhill, M.D.,
55 East Washington Street, Chicago 2.